

PROCEEDINGS
OF THE
Casualty Actuarial Society



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NOTICE

The Society is not responsible for statements made or opinions expressed
in the articles, criticisms and discussions published in these *Proceedings*.

ERRATA

In Mr. Paul Dorweiler's paper entitled "Observations on Making Rates for Excess Compensation Insurance" the formulas for R_{l_1} on page 159, Volume XIII should be:

$$\begin{aligned} R_{l_1} &= a \cdot b_{l_1} \cdot \frac{T_n}{18976} + \left(1.0210 - \frac{T'_n \cdot A + N_n \cdot l_1}{18976 A} \right) a \\ &= a \left(1.0210 + b_{l_1} \frac{T_n}{18976} - \frac{T'_n \cdot A + N_n \cdot l_1}{18976 A} \right) \end{aligned}$$

PROCEEDINGS

NOVEMBER 18, 1927

PRESIDENTIAL ADDRESS OF THE FOURTEENTH ANNUAL MEETING OF THE CASUALTY ACTUARIAL SOCIETY

SANFORD B. PERKINS

The receipt of the report of the Special Committee to consider ways and means by which the activities of the Casualty Actuarial Society could be extended to embrace practical current and statistical problems has rendered the selection of a text of the presidential message for this session a simple task. This report came to your President rather in the form of a mandate which was very willingly accepted. It was welcomed, first, because I conceive it to be one of the duties of your President to keep the Society as a body in touch with the various developments of the policies of the Society as they are extended or modified from time to time by the Council, and the presidential address or message seems to submit itself as a most convenient and effective means of transmitting this information. Secondly, it may have been a case of the wish being father to the thought because the subject at hand happens to be one which is of tremendous interest to me.

The full text of the Special Committee report referred to is as follows:

"Article II of the Constitution defines the object of the Casualty Actuarial Society as follows:

'The object of the Society shall be the promotion of actuarial and statistical science as applied to the problems of casualty and social insurance by means of personal intercourse, the presentation and discussion of appropriate papers, the collection of a library and such other means as may be found desirable.'

"The Casualty Actuarial Society is a scientific body devoted to the impartial consideration of the problems of casualty and social insurance. As such, its contribution is dependent upon the ability, initiative and efforts of its individual members. As a practical matter, however, it is important not to overlook the practical application of actuarial principles to those problems of the business which the individual members in their daily work are called upon to solve. Only by keeping this fact in mind will it, in our judgment, be possible to stimulate and maintain a keen interest in the Society's work.

"Casualty insurance is an ever growing and enlarging business and the field for the Society's efforts is constantly broadening. Problems arising in casualty insurance are of two kinds which, for lack of better definitions, may be designated as major and minor. Each class of problem may be still further classified as current or prospective. It is appreciated that a society such as ours meeting only twice each year can not expect to deal with current problems of minor importance. To attempt to set up machinery for this would, we believe, prove unsatisfactory. The Society, however, is equipped to deal with current problems of major importance through the creation of special committees to deal with such problems. The Society is also well equipped to deal with prospective problems, or problems, the solution of which does not demand immediate action, either through regular committees or special committees.

"It is our feeling that the membership of the Society should appreciate that the Society is well equipped to help solve important problems connected with casualty and social insurance and should bring such problems before the Society.

"One means of bringing problems before the Society is through the presentation of papers and we believe that this should be encouraged by placing a problem before the Society in the form of a paper where the nature of the problem is such as to justify this method of proposal. This is a means of materially increasing the scope of the Society's activities in the field of current actuarial or statistical problems.

"There are in existence at the present time organizations well equipped to handle certain current problems which are performing their work satisfactorily. We believe that the Society collectively should be kept in touch with the work of such organi-

zations and that problems of interest to the Society considered and acted upon by such organizations should be reported upon through the *Proceedings* of the Society. This, we believe, would form an interesting and instructive portion of the 'Current Notes' section of the *Proceedings* and would bring to the attention of the membership many interesting features of casualty insurance problems and other related matters which might properly become the subject of further investigations by the Society. If necessary, an additional assistant editor could be provided for to cover this feature of the Society's work.

"The feature, now in the experimental stage, of devoting a considerable portion of our meetings to an open forum for discussing questions of current interest in casualty and social insurance suggested by the various members should, judging from results attained from this feature by other actuarial societies, add to the scope and usefulness of our Society.

"We believe also that the work and usefulness of the Society would be improved upon by seeking out and enrolling as Associates without examination under the provisions of Article III of the Constitution those engaged in casualty actuarial and statistical work who have shown by their work in other organizations dealing with casualty insurance problems that they are qualified for membership in the Society.

"We further believe that the Society should take the initiative in inviting to our meetings men who, while not qualified for membership under our present Constitution, have demonstrated their interest in our own or related problems.

"To summarize, we make the following recommendations:

- (1) That the Council, through the President, bring to the attention of our membership the facilities of the Society for dealing with practical, current and statistical problems of major importance through the appointment of special committees and the presentation and discussion of appropriate papers and point out to our membership their individual responsibilities for bringing such problems before the Society.

- (2) That the Council authorize the Editor to print in the *Proceedings* a digest or summary of casualty and social insurance problems and subjects of current interest considered and acted upon by other Casualty organizations or associations.

(3) That the Council, through the President, call the attention of the membership to the desirability of enrolling as Associates without examination under the provisions of Article III of the Constitution those engaged in casualty actuarial and statistical work who have demonstrated by their work in other organizations dealing with casualty insurance problems, that they are qualified for membership in our Society, and urge the Fellows of the Society to bring the names of those so qualified to the attention of the Council or the Chairman of the Committee on Admissions.

(4) That the Council, through the President, call the attention of the membership to the desirability of inviting to our regular meetings those who, while not qualified for membership under our present Constitution, have demonstrated their interest in our own or related problems and request the membership to advise the Council the names of such non-members who would be interested in attending some of our regular meetings."

The first recommendation I consider of particular importance. The Casualty Actuarial Society stands alone today as the only organized body of casualty actuarial technicians and is, therefore, preeminently qualified to serve in an advisory capacity either to companies or to supervising officials in connection with problems requiring scientific solution.

It is only natural that with but few exceptions the major problems arising out of the conduct of the various casualty lines today involve competitive elements. It is to be expected that the treatment of those same problems should be flavored with a partisanship, the sincerity of which only reflects one of the elements which measures the degree of success of the participants in their own particular field of endeavor. Article II of the Constitution of the Society defines as part of its object that "The Society shall take no partisan attitude, by resolution or otherwise, upon any question relating to casualty or social insurance." In the consideration, then, of scientific problems by the Society, bias must be eliminated. Science must be divorced from partisanship and each problem must be treated on its merits. Practicability must not be confused, however, with partisanship. Practical solutions are often times arrived at by affecting a compromise between an exact scientific solution and efficient and

economic administration but in arriving at that state of practicability a very nice equation must be set up between loss inaccuracy and gain in administrative efficiency.

The work of the Special Committee which is now actively dealing with the subject of compensation and liability loss reserves furnishes a good example of the character of problems with which the Society is well qualified to cope. Another may be found in a paper which is being prepared for submission to the Society in connection with the determination of proper reserves for claims incurred but not reported. I might also refer to some very excellent work which was done under the auspices of this Society a few years ago in connection with reserves for non-cancellable accident and health claims.

The second recommendation is extremely comprehensive in its scope but is, nevertheless, in keeping with the general theory that the *Proceedings* should constitute a permanent record of material of vital interest to the Casualty Actuarial fraternity. Adoption of such a recommendation would impose a serious and laborious obligation on the Editor in that it demands that he, either personally or through designated lieutenants, keep in constant contact with the activities of such other casualty organizations or bodies as may be giving consideration to matters falling within the field of interest of this Society.

The recording of facts may be carried to either of the extremes. It is a simple matter to refer to any one of the various casualty hand books, for instance, to determine how much premium has been written in any calendar year for any particular line and therefore how much experience should be available for the purpose of ratemaking. On the other hand, a detailed exposition of rate-making systems for the various lines might be incorporated as papers from time to time in which would be recorded the experience actually used in the making of rates. Duplication of the former would be unnecessary and a series of ratemaking papers of each line every year would make the *Proceedings* unnecessarily voluminous but this recommendation of the Committee seems to offer a very satisfactory middle course by which the pertinent facts in connection with the current problems may be digested, condensed and recorded. While the recommendation specifically mentions other casualty organizations or associations, I should hope that it would be interpreted liberally enough, for

instance, to incorporate a very comprehensive record of such problems as those being handled by the Special Conference Committee appointed by the New York Insurance Department to make recommendations of a method of redistributing the expense and loss dollars of compensation premiums to more equitably measure the expense and hazards of the business by size of risk. It so happens that each member of the Committee is a member of this Society and I should hope that some subsequent number of the *Proceedings* would carry a full record of the Committee's accomplishments.

Calls for experience are emanating almost continuously from statistical organizations or ratemaking bodies and with each new call the individual company statistician is confronted with the necessity of determining methods best suited for compliance with the terms of the call. The Association of Casualty and Surety Accountants and Statisticians, for instance, takes under consideration every such new call and sets up a procedure best suited to the statistical organization of its various company members. Doubtless other groups of statisticians are making similar investigations. What a contribution to the development of good statistical procedure could be offered by recording in our *Proceedings* the results of deliberations of such organizations. The advantages to the Society and the particular association or organization in question would be reciprocal. The benefit to this Society, through the appreciation in the value of the *Proceedings*, would be obvious but the benefits derived by the contributing association which would result from the favorable publicity extended to their work through the medium of our *Proceedings* would be just as real if not as self-evident.

While I am entirely in sympathy with the third recommendation of the Special Committee which deals with the possibility of enrolling as Associates without examinations those engaged in casualty actuarial and statistical work, I feel that some elaboration of what was most probably in the minds of the Committee would not be out of order. I have substituted the word "possibility" for "desirability" as it appears in the original Committee recommendation not because I believe that "desirability" does not reflect exactly what was in the minds of the Committee, but because I do not wish there to be a possible interpretation from the recommendation, as I understand it, that it is any degree

less desirable that Associates be made through the examination route than heretofore. Emphasis should, therefore, be laid upon the equal possibilities of becoming Associates in either one of two ways. There are usually several means of attaining the same end and two or more are apt to be equally satisfactory.

A candidate for Associateship in this Society should be mentally qualified before he is admitted. In the last analysis ours is an actuarial society. It does not follow that all members shall be actuaries but that they shall have actuarial interests. A man can not be made an actuary by being called one nor is it any more true that all men who have bona fide actuarial interests are so titled. It is possible to arrive at the qualification point through two distinctly different routes. The one carries the candidate through an extensive course of study at the conclusion of which he is prepared to receive the necessary operating experience. He may have mastered the theoretical science and he must needs master its application. The alternative route lies through mazes of application during the course of which interest is stimulated in the reasons for the selection and the results of the application of the particular treatments employed. Eventually the thus stimulated mind suggests supplementary study until there is created by this process of combined application and theory a real actuarial interest.

This Society is admittedly desirous of extending its membership but the real requirements for membership must not be submerged in the attainment of that purpose. A demonstration must be required of the thoroughness of the candidate's preparation through whichever route he happens to qualify. Demonstration of qualification of the first mentioned route is easily possible through a series of examinations while the genuineness of preparedness through the second is most generally measurable by the degree of responsibility that has been entrusted to the candidate by the business concern with which he is connected. Our Constitution recognizes that a candidate "who for a period of not less than two years has been in responsible charge of the statistical or actuarial department of a casualty insurance organization" has arrived at the point of qualification for admission to the Society as an Associate. Therefore, our members should feel equally free to urge those who are qualified for Associateship to make application for such membership regardless

of the means by which they have arrived at the state of qualification. Having in mind, then, that under the terms of our Constitution which provides for the enrollment in the Society of Associates by other means than passing prescribed examinations and realizing that under the intended interpretation of those terms such candidates would be fully qualified for membership, I whole-heartedly agree with the recommendation of the Special Committee that our efforts be extended toward interesting such prospective candidates in our Society and that the present Fellows and Associates assume it as a personal obligation to stimulate such interest and secure applications from those of their associates as are qualified to become Associates without examination.

The soundness of the Committee's concluding recommendation seems so self-evident as to warrant very little additional comment although in making this recommendation the Committee has both raised and settled the issue as to whether the sessions of this Society should be confined to its members and Associates or should be extended to all who have legitimate interest in its aims and objects. While this issue may have never been definitely decided prior to this time, precedent has established the latter course as being the one acceptable to our membership. Sane judgment could not dictate otherwise. The Society has always been the gainer and never the loser by following such a policy. Contributions which have been made by non-members to the deliberations of the Society through papers or discussions have been of interest and value. Freedom should be felt at any time to invite to the sessions of this Society those who may be interested in the subjects under consideration or those who may be persuaded to contribute by discussion or suggestion anything of value to the solution of any problem which may be before us. Incidentally, the willingness of those who have no real obligation to participate in our deliberations should act as an incentive to those of us who actually share in the obligations of membership, to meet that obligation by extending ourselves a little more generously in carrying on the program as outlined in the Articles of the organization of which we are a part.

In conclusion, let me express my gratitude to the Special Committee for giving me the opportunity of delivering to you a message which has the support of that Special Committee as well as of the Council of the Society and which could be no more nearly a reflection of my own mind if it had actually emanated therefrom.

METHOD FOR SETTING UP RESERVE TO COVER
INCURRED BUT NOT REPORTED LOSS LIABILITY

BY

NELLAS C. BLACK

This paper is not intended as a scientific treatise of an obscure subject, but is submitted to introduce for discussion the practical side of an acknowledged liability which is of considerable consequence to insurance companies, and should be given the proper consideration. No company will deny a hidden liability in unreported claims, but there is quite a bit of dissension as to how it should be treated. This question has been considered from every angle by the Fidelity and Surety Committee of the Association of Casualty and Surety Accountants and Statisticians, and the report of that Committee is taken as the base of these remarks. That Committee particularly, and the Association generally are responsible for any consideration that may be given this subject, with the added responsibility that the writer may have included matters that do not meet with their entire approval. However, a complete discussion of the many points involved cannot help but do something toward clearing the atmosphere.

* * * * *

An incurred but not reported loss liability is, as the term implies, the liability for losses which occurred on or before the end of a given period, but of which the accounting office of the company had no knowledge until after that period.

There is always a volume of such losses, as losses of different types are in the course of evolution which come to light at uncertain future dates, and incidents are occurring continually throughout the country which are not reported promptly to company representatives. Also, when losses are known in the field, they must be reported to the Home Office before they can be added to the liabilities of the company, and the period of transmission accounts for a number of these claims. This liability therefore is created by delayed notices of losses, which may be divided into two general classes, namely:—

- (a) Latent Losses; Losses occurring daily but not coming to light until a later date.
- (b) Belated Losses; notices delayed because of the time required for transmittal to the Home Office.

While this hidden liability is continually in existence, and is now being taken into consideration by many companies regardless of the date any experience exhibit is compiled, it has been, and still is to a large extent, looked upon as a calendar year item to be adjusted only at the end of each year. This can be laid to the fact that the item was introduced officially by the form of Annual Statement adopted by the convention of Insurance Commissioners in which the term "Incurred but not reported" is used. Provision is made for the inclusion of this liability in the "Losses and Claims" exhibit on page 5 and at the foot of Schedules "J" and "K".

By providing for this item without comment or instructions, the insurance departments apparently assumed that any company could show this liability without much trouble, and each company estimated the amount of such liability according to its own interpretation and judgment. Generally speaking, these estimates were passed by the insurance departments without question, until the recent investigation made by the New York department, when it was disclosed that in many instances the reserve of a previous year was inadequate in the light of a subsequent year's analysis.

However, just as it is obvious that unreported losses exist, it is equally manifest that no company can foretell, with any degree of accuracy, how much liability is involved. Large claims coming to light in one year do not necessarily imply that large sums should be put up for the next any more than small claims indicate small amounts. While it is true that the individual companies should take this liability into account in rendering periodical financial reports, different judgments have operated in the adjustment of the value thereof to such an extent, that no two estimates are comparable, and no one can tell which company has exercised the best judgment in setting up its reserve. If the actual value of delayed cases for any particular period approximated the unknown loss reserve set up for that period it would be nothing more than pure coincidence.

While the existence of certain unreported losses is acknowledged by the recognition of the incurred but not reported liability, this unknown liability, insofar as individual cases is concerned, ceases to exist after the loss is reported. The loss is then valued on a definite basis and the true liability is erected. Hence the

claim is no longer "incurred but not reported", but is a reported claim which was delayed, and must be handled as any other loss. This fact throws the unknown loss reserve into the class of a contingent reserve, which, like a catastrophe or voluntary additional reserve, is for the purpose of setting aside certain funds which otherwise would go into surplus, to provide for unforeseen incidents; with the exception that the incidents have actually occurred. A contingent reserve of this character cannot be subject to case analysis. Specific cases are not involved, therefore it cannot be measured by cases known in the future which are then automatically included in the known liabilities. This reserve is erected solely as a safety reserve for financial statement purposes only, and, therefore, instead of being expended, should be carried until it is replaced by the figure used in the next statement.

The main point for consideration is, how can an adequate reserve for this unknown liability be erected? Each company has its own ideas regarding this, and very probably, like the estimating of reserves on known cases, its method serves its individual purposes. This is true in all forms of accounting; and from the company point of view, a short form financial statement should be sufficient to indicate its degree of solvency to the insurance departments, with the checking of those statements through the periodical examinations. However, the elaborate annual statement required at the close of each calendar year has evolved from the ideas of different insurance department officials and committees to meet certain real or anticipated conditions, and it is therefore necessary to adjust this valuation so that it will meet with the approval of the insurance departments.

To do this, this reserve must be valued so that, in addition to being reasonably adequate, it will be consistent between years and uniform for all companies. While it is true that no individual company can foretell what the coming year will develop, it can be assumed that with sufficient spread, the past will give indications of the future. On the basis of this theory it is believed that every purpose will be answered by the adoption of a formula method of establishing this reserve, based upon actual past experience.

Acting upon this belief, the Fidelity and Surety Committee of the Association of Casualty and Surety Accountants and Statis-

ticians who were engaged in studying the question as it pertained to the fidelity and surety lines, considered the figures filed by each company with the New York Insurance Department, as of December 1st, 1926, covering their 1925 and previous unknown losses reported from January 1st to December 1st, 1926, as it was believed that these figures would give a considerable spread of delayed claims from which a fair indication of a reserve basis could be secured, by comparing them with certain established figures. Thereupon the Committee circularized the companies for the following:

(a) The unknown losses furnished the New York Insurance Department.

(1) Net premiums written during the preceding year.

(2) Net premiums in force at the end of the preceding year.

(3) Unearned premium reserve as of December 31st of the preceding year.

(4) Premiums earned during the preceding year.

(5) Losses incurred during the preceding year.

This gave the Committee the relationship of a large spread of unknown losses to five different sets of established figures which were tabulated and studied by the Committee, who arrived at the following conclusions:

(a) The relationship of unknown losses to losses incurred presented such a wide variation as between companies that this basis was discarded. Moreover, because of the fluctuation of incurred losses from year to year, it was considered an unsatisfactory basis upon which to figure a ratio.

(b) The ratios of unknown losses to net writings, net premiums in force, premium reserve and unearned premiums showed about the same range of variation in the respective groups, due to the fact that these figures are more or less co-related.

(c) The group showing the narrowest range of variation was that of net premiums in force. This is due, to some extent, to the larger figures involved. Upon the theory that this group expresses more consistently than any other group the cumulated bond liability of a company, in which there is always inherent a percentage of latent loss, it is the opinion of the Committee that net premiums in force furnish the most logical and most practical basis upon which to figure the ratio for an unknown loss reserve.

In order to arrive at an average ratio, the figures of twenty-three companies writing fidelity and surety lines were combined and show the following results:—

Lines of Business	Unknown Losses	Net Premiums in Force	Ratios
Fidelity.....	3,471,292.	34,939,382.	9.94
Surety.....	1,935,379.	56,125,141.	3.45
Total.....	5,406,672.	91,064,523.	5.94

It was pointed out in the Committee's report, that net premiums in force, in addition to being the most consistent basis for the reserve, was sufficiently constant in its development to enable any Company to apply the percentage to the figure of November 30th, if the end of the year figure were not available by the time the amount of the reserve was required. The Committee then recommended as minimum practical percentages, 10% for fidelity and 3.5% for surety, which percentages closely approximate the averages shown by the tabulated figures.

While the findings of the Committee did not include the miscellaneous casualty lines, the same reasoning can apply to those lines and a similar method may be used for establishing the reserve on each. However, the problem is not so involved where those lines are concerned, as the unreported claims are practically all composed of the belated type, whereas the fidelity and surety lines are affected principally by the latent type.

This brings us to the question as to which losses should be assigned to the latent type. This question should be given serious consideration because of the convictions of some that the "incurred but not reported loss reserve" should be tested by case analysis from year to year, and the further complications which are brought about by the present arrangements of Schedules J, K, G and O.

One company has suggested the following set of rules for the assignment of delayed claims:

Fidelity	All bonds in these classifications cover the
Public Official	honesty of the principal, and are subsequent
Federal Official	claims only when the embezzlement occurs
Court (Fiduciary)	prior to the current year.

Court Guarantees All bonds under these classifications are court financial guarantees and the date of claims is the date on which the final court decides the case against the applicant for bond.

Federal Contracts The date of default is the date of claim
Public and Private Contracts except when the loss is for labor or material. In such case materials purchased prior to the current year create a subsequent claim.

License and Permit The date of claim is the date on which the
Miscellaneous act, because of which the claim arose, occurred.

Depository These are in default the day the bank closes.

One set of rules may be as good as any other if they are universally accepted and adopted, but it is generally acknowledged that conditions arise in many bond claims which make it practically impossible to assign them by established rules, and furthermore, the conditions, if given, are stated very often in such a way that a thorough reading of the file is required to get all the facts. Even when all the facts are readily available there are differences of opinions which make it a common occurrence for two authorities in the same company to disagree on the same case, and there have been instances where one authority has reversed himself on two cases of the same type. A number of examples (as furnished by another company) are listed below, which make an interesting questionnaire, and serve to show the impracticability of assigning cases without an involved set of rules which no two companies would give the same consideration:

FIDELITY BONDS

1. \$5,000 fidelity bond—year April 1, 1925 to April 1, 1926; April 1, 1926 to April 1, 1927. (Liability non-cumulative.) June 1, 1927 notice of loss \$15,000. Paid June 15, 1927—penalty of bond \$5,000. Stealings: April 1, 1925 to December 31, 1925 \$5,000; January 1, 1926 to December 31, 1926 \$5,000; January 1, 1927 to April 1, 1927 \$5,000.

There was a \$5,000 loss in 1925, \$5,000 in 1926 and \$5,000 in 1927. The 1925 loss and the 1926 loss are previous and the 1927 loss is current. The current loss exhausts the penalty of the

bond. Which loss is paid by our settlement, the current loss or the previous loss; or is it to be considered that our payment covers $33\frac{1}{3}\%$ of each of the years' stealings?

2. On the same statement of facts, suppose that, in addition, the principal makes good \$10,000 of the loss. Then, is our payment of \$5,000 which we would be obliged to make, on account of the current loss or the previous loss?

3. Fidelity bond of \$5,000 covering for calendar years 1925, 1926 and 1927. Principal steals \$5,000 in 1925, is not discovered. In 1926 steals \$5,000, uses it to make good the stealings of 1925. In 1927 steals \$5,000 and uses it to make good the stealings of 1926. Afterwards in 1927 he is discovered \$5,000 short. In what year did the loss occur?

4. Suppose bond for year 1925 was carried by "A" Company; for the year 1926 "B" Company wrote exactly the same form of bond with superseded suretyship rider for 1926 and 1927. The bond of "A" Company contained two-year limitation for discovery of loss. Principal steals \$5,000 in 1925, which is not discovered. In 1926 he steals \$2,000 and applies it as a credit on his shortage of \$5,000 in the previous year. In 1927 he steals \$2,000 and applies \$1,000 as a credit against shortage of 1925 and \$1,000 as a credit against shortage of 1926. The total shortage of \$5,000 is discovered in 1927. To what years is the loss to be charged?

5. Suppose on the above statement of facts the principal pays \$2,000 salvage before the surety companies settle their liability and the net loss paid to the obligee company by the sureties is \$3,000. Is the payment of \$3,000 by the sureties current or previous?

6. We have a \$10,000 fidelity bond on a bank employee, which was in force during the years 1926 and 1927. In June 1927 the principal is discovered short exactly \$10,000 and investigation discloses there were no manipulations or false entries on the books but that he merely abstracted from the cash drawer at different times a total of \$10,000 in cash. There is no way to tell whether he abstracted the money in 1926 or 1927 or previous to 1926 when he was not under bond. Are we to assume that the \$10,000 or any portion of it is to be charged as a current loss or are we to assume that any part of it is to be charged to previous loss?

7. "A" company has an individual fidelity bond executed February 1, 1920 and renewed up to February 1, 1927. The bond contains a six months' limitation for discovery of loss. On February 1, 1927 we wrote a bankers blanket bond to which was attached superseded suretyship rider. The six months' limitation under the fidelity bond would expire August 1st. On September 1st a \$10,000 shortage was discovered, all of which occurred prior to the date of the bankers blanket bond but was discovered subsequent to the six months' limitation in the fidelity bond. In this case the liability of course is under the blanket bond and the loss will be paid thereunder. Is this charged as a current or previous loss? If as a previous loss, will it not show a loss paid under a bond which was not in force at the time the loss occurred?

8. All of these questions involving fidelity coverage arise in still more complicated fashion where blanket bonds and successive blanket bonds are involved. In the blanket bonds there is in addition to the fidelity protection against other forms of loss, as for instance, misplacement. Suppose in a particular case a security or bond was known to have been in its proper place in June or July 1926 and search for it in May 1927 failed to disclose it. When was it misplaced? Claim is made under the misplacement coverage. When paid is it a current or previous loss?

9. Bank holds \$100,000 bankers blanket bond written in 1925. In April 1927 loss of \$250,000 discovered. Loss occasioned by stock dealings and upon closing account of employee recoveries aggregating \$164,000 effected and applied as a credit. Net loss to surety \$90,000. No way of determining what portion of loss occurred in 1926 and what portion in 1927, though a loss occurred those two years. Is loss to be charged current or previous.

10. Underlying fidelity schedule, coverage \$50,000 primary blanket bond, \$25,000 excess blanket \$25,000. Total loss \$754,000 extending over period of two years. The only way to determine date of loss is date entries covering peculations were made in books of bank. These entries undoubtedly note dates when money stolen because of various discoveries made in course of investigation. Loss paid \$100,000. How charge—current or previous? In this case recoveries from closed accounts with stock brokers aggregated \$170,000.

11. Bond of \$25,000 primary, \$75,000 excess. \$25,000 primary dated 1924—excess \$75,000 dated 1924 cancelled December 1926.

Beginning in 1926 a customer of the bank overdraw his account several thousand dollars. This loss made good by depositing checks in a larger amount drawn on eastern banks (obligee bank being located on the Pacific Coast). While these checks were clearing he would withdraw from his account the difference between his previous overdrafts and the amount of the deposit. Upon these checks being returned by the eastern banks marked "insufficient funds" the customer would deposit additional checks on eastern banks in the excess amount of his then overdraft. While these checks were being cleared he would draw out the difference between the previous overdrafts and the latest deposit. This occurred almost weekly during 1926, with the knowledge of the president of the bank, who O. K.'d checks on the eastern bank for deposit to the credit of the customer. Early in February 1927 checks were deposited to the customer's credit to a total of about \$800,000, which would have covered his overdraft and probably left him a substantial deposit to his credit. Before these checks were reported on the bank closed. Claim is made under the above bonds because of the president's alleged connivance. If loss is sustained and paid should it be charged current or previous?

PUBLIC OFFICIAL BONDS

1. *Class—City Treasurer.*

Term—May 1924 to May 1928.

Principal dies May 1st, 1927.

(In 1924 a bank deposited bearer bonds with principal as collateral to secure principal's official deposit in that bank. The bearer bonds have not been located. As principal stole other amounts it is assumed he stole the bonds as well. The bonds, therefore, disappeared between May, 1924, and May 1, 1927.) Should reserve be current or previous or divided? How divided and why?

2. *Class—Sheriff and Tax Collector.*

Term—December 1924 to December 1928.

Principal resigns June 1927, having failed to collect some 1925

taxes and 1926 taxes, but in fact used 1927 tax proceeds with which he made settlement for 1925 taxes. Is this current or previous in June 1927?

3. Class—Tax Collector.

Term—1924 to 1928.

November 1926, principal receives tax list which he is to collect. He is obliged to settle with the county February 1927. He dies in March 1927, whereupon it becomes the duty of the surety to collect the taxes, but the law gives the surety one year from the death of the principal to settle. In 1927 the surety posts a reserve against estimated uncollectible taxes. Is this current or previous?

4. Class—County Treasurer.

Term—This principal continuously in office 16 years.

F. and D. is on bond 1909 to 1913, 1917 to 1921, 1925 to 1929.

X Company is on bond 1913 to 1917, 1921 to 1925.

Principal resigned June 1, 1927.

The facts were that the principal did not keep any books and destroyed the books of his predecessor. From miscellaneous sources the total amount of taxes he had for collection were determined and the amount of warrants paid by him definitely ascertained. Claim was made jointly on the two sureties for \$50,000 which the F. and D. settled by paying 10/16ths and the X Company 6/16ths. Was this payment current or previous and why?

5. Class—Tax Collector.

Term—December 1924 to December 1928.

February 1927 surety is advised that auditors are working on books of principal who has disappeared and who is believed short \$40,000. February 1927 auditors report shortage \$6500, which principal collected in December 1926 and January 1927. March 1927 claim made for \$128,437.45, covering taxes collected and not remitted and covering taxes not yet collected, but for which principal does not have to make settlement until May 1927. Is this current or previous?

6. Class—City Commissioner.

Term—May 1924 and ending indefinite.

June 1927 claim made for \$11,621.90 for improper disbursements between July 1926 and March 1927. Is this current or previous?

7. *Class—Sheriff and Tax Collector.*

Term—December 1924 to December 1928.

In May 1927 claim is made for the difference between total taxes to collect and remittances made by principal. Principal's records were partly missing, but enough were left to show he had used the collections for one tax year to pay the taxes of another year, which latter taxes in fact he had not collected. The amount of the liability was easy to determine and that it came within the bond period was easy to determine. The liability was settled. Was this current or previous?

8. *Class—County Treasurer.*

Four bonds covering four year periods each in penalty of \$60,000.

Bond Term—Last bond January 1913 to 1917.

Claim filed March 1, 1917 for \$50,000.

Bond liable for taxes collected and uncollected. Claim for \$50,000 based on the difference between taxes to be collected over the sixteen year period less amount paid by principal to State covering State taxes and warrants paid by principal as disbursements from County taxes. The claim made in lump sum without designating total of warrants paid in one calendar year and total of amount paid State in that year against tax levy for that year. Reserve posted in full when claim was made and claim paid in full after verification. Was this current or previous and why?

9. *Class—Reinsurance to another corporate surety.*

Term—April 8, 1926 to June 18, 1927.

June 10, 1927 the reinsured company advises us that the audit of principal's accounts for fiscal year ending March 31, 1927, shows deficit of \$9,000 and the reinsured company is posting full reserve. F. and D., therefore, has to post reserve covering its portion. Quære: How can the F. and D. know whether to charge all or part of this to losses which have occurred and not reported when the reinsured company has not that information itself?

JUDICIAL BONDS

1. A guardian qualified in 1915. In 1916 he files an account taking credit for a loss on the sale of some property. In 1925 the ward becomes of age, excepts to the guardian's final account, and among other things, objects to the credit taken in the 1916 report. When did the loss occur?

2. A guardian is appointed by the court in 1918, the two wards being his sons. In 1919 he invested the assets in a mortgage secured by farm property. This investment was approved by the court and he thereafter made his yearly accountings in accordance with the local law. In November 1926, the guardian died and the wards, being 21 and 22 years respectively made claim against the surety in April 1927, alleging depreciation in mortgage security and loss to the estate as result of neglect on the part of the guardian in not keeping in touch with investment. Is this loss current?

3. Party died and was alleged to have guaranteed the payment of certain bonds. In order that the estate might be administered upon, a refunding bond was written guaranteeing that if there was a failure on the part of the company on whose behalf the bonds were issued to pay them when due, and if, furthermore, there was as established liability on the part of the estate, that the surety would assume payment of same. The original bond was executed in 1920. Demand was made on the estate in 1926, but was not made on the surety until March 1927 and suit was filed in May 1927. What date did the loss occur, for the purpose of reserve?

4. When does liability arise under a release attachment bond when verdict was rendered against the principal in November 1926, a new trial was granted in February 1927 and verdict in the new trial was handed down against the principal in May 1927? Was this a current or previous loss?

5. Replevin bond is written. Judgment goes against the principal who takes an appeal. On appeal the judgment of the lower court is reversed with a new hearing on the grounds that there is inadmissible evidence in the record. Verdict on appeal is handed down in 1926 which is three years after the original judgment of the lower court. Principal in the meanwhile is bankrupt and the surety finances the defense. Judgment goes against the principal in the lower court proceeding in May 1927. On what date should reserve be charged?

6. On December 10, 1926 judgment was handed down against the principal on an attachment bond and appeal was instituted and only a cost bond on appeal filed. There was a failure to prosecute the appeal and demand was made under the attachment bond in May 1927. Should this be entered as a 1927 reserve, surety having no knowledge of the judgment which was handed down in December 1926?

7. An administrator was bonded in the State of Virginia in 1920. In 1926 he died and a new administrator was appointed. During the interim, certain administration fees had been allowed the old administrator each year but the new administrator takes the position that the failure to wind up the administration of the estate was through negligence on the part of the old administrator and that under the statutes of Virginia, the old administrator was not entitled to any administration fees, this question being raised in 1927. When did the loss occur?

8. We bonded an operating receiver who carried on a mercantile business. The original bond was executed in 1922. In 1926 he was removed on the grounds that the business had been showing a substantial loss, although this fact was not shown in his reports to the court. It is disclosed in the hearing that in order to keep his job, the receiver has charged the losses of the business against the stock on hand and that instead of having \$20,000 in stock, as the receiver's accounts would disclose, he has only \$8,000 in stock on hand. His testimony shows that this is true and that he had continuously lost money in the business since his appointment. There is nothing to indicate just how much money was lost each year as the stock inventories submitted to the court were padded. He disputes his liability and demand is made on the Surety in February 1927. When did the loss occur?

9. A bail bond was executed in Indiana in 1923. In 1924 the principal entered his appearance at the trial and the verdict being against him, an appeal was taken. No new bail bond was procured pending the appeal and no order of court was rendered discharging the old bail bond. A judgment on appeal was rendered in favor of our principal reversing the lower court, same being handed down in July 1926. In May 1927 demand was made under the original bail bond. Defense was put up that the judgment on appeal had operated in favor of our principal. We were then faced with the allegation that under the Indiana

statute, a decision on appeal must be certified to the lower court within six months after rendition; otherwise, same is void and liability still exists in the lower court proceeding. To what year should the loss be charged while fighting out the issue?

10. Bail bond issued in February 1926. In December 1926 case set for trial and principal failed to appear. Ten days thereafter in December 1926 formal forfeiture was entered up. Subsequently, in December, 1926 principal's attorney secured a stay of forfeiture until June 1927 at which time principal fails to appear and final forfeiture entered. Does the stay proceeding operate to suspend liability until 1927?

11. Receiver qualified under our bond in 1923 in California court. In March 1927 demand for damages is made on grounds that court had no jurisdiction to appoint receiver. Should this be termed 1923 liability?

12. A trustee was bonded in 1921 and died in 1923. The succeeding trustee made claim under the bond and a loss of \$700 was paid upon which the old trustee's account was closed of record. In 1927 the succeeding trustee reopened the matter, stipulating certain credits were allowed on livestock which did not belong to the estate. If a reserve is to be entered, why is same not current?

CONTRACT BONDS

1. Bond guaranteeing performance of a public contract under which surety is liable to furnishers who comply with statutory requirements as to notice, etc. In October 1926 we received from furnisher of material notice in accordance with statute, which notice specifically states it is not a claim under the bond but merely a compliance with the statutory requirements as to notice. In April 1927 contractor defaults in performance, and surety pays loss on account of excess cost of completion, also pays labor and material furnishers including the one who gave notice in 1926. The labor and material bills include those incurred in 1926, and those incurred in 1927, and those incurred both in 1926 and 1927. How will this loss be charged?

2. Contract bond includes a guaranty against damages for the infringement of a patent. The contractor uses the patented process during 1926 and 1927. Claim made on the bond for the infringement of the patent in 1927, which alleges the quantity of

the patented process used and upon which the damages are based, and alleges that the infringement was between October 1926 and July 1927.

3. In October 1926 we received notice from obligee that our principal, a contractor for the construction of a state highway, is financially involved. Conferences looking to adjustment continue until December, 1926 when work is closed down for the winter. There is no default. April 1, 1927 contractor admits his inability to proceed with the work. Loss is sustained on completion. To what year is the loss chargeable?

4. Contractor defaults in 1925. Surety waives completion, and owner completes on assumption that he has more than sufficient to cover cost of completion. The cost of completion is paid by the owner out of funds in his hands which are exhausted in February 1927, and contract is completed in March 1927 at an excess of \$8000 which the surety pays as a loss. Is this current or previous?

5. A paving contract is started in November 1926, and completed in April 1927. The bond guarantees maintenance due to defects in construction. In May 1927 a claim is made to maintain a portion of the street.

6. Contract contains clause guaranteeing against defects in workmanship for one year. Contract is completed June 1926. Claim for defects in workmanship made May 1927. When loss is paid, is it current or previous?

7. Contract bond among the provisions of which is one guaranteeing efficiency of heating plant. The building is completed and accepted in September 1926. First opportunity to test plant in zero weather, as required by specifications, occurred in February 1927 when plant found to be inefficient. Surety repairs same at loss in 1927. To what year is loss chargeable?

For those who may still wish to analyze delayed claims, it would not be far amiss to suggest that each claim supervisor use his own judgment, as whatever the results may be, they would equally answer any purpose. However, if the results so obtained are considered from all angles it will be found that for the individual company this analysis is burdensome, unreliable and of no value for the next year's reserve estimate and, therefore, would not justify the expense involved; consequently it should be avoided. The formulary method of arriving at this reserve

is suggested with the hope that the insurance departments will recognize its value for all practical purposes, and it is strongly recommended for company use.

The formula basis submitted in the aforementioned Committee's report combines the judgment of twenty-three companies, therefore gives the average percentage of varying methods of treating what cannot be considered other than vague matters, and can be accepted as true enough for all practical purposes. The volume is sufficient to make the percentage substantial and it can be assumed that the reportings of cases received during the eleven months of 1926 which were incurred prior to that year, represent an average period. There may be some company officials, and possibly some of the insurance departments who are not satisfied with a formula which cannot be checked so it can be changed with the trend of times. The inadvisability of the individual company using the delayed cases of one year to indicate the reserve for the following year is strongly stressed and it is further contended that if a check is desired it still can be made without the labor of delayed claim analysis.

That is to say, each insurance department in the periodical examination of companies, ascertains the value of delayed cases as they pertain to the statement being examined, and it would not be difficult to accumulate these amounts with the corresponding premiums in force so any change in trend will be indicated. This examination is helpful to the individual company, as it gives them the comparison at regular intervals without necessitating an expensive system of yearly analyzation.

If in such a test by the insurance department the formulary ratio in any particular company should not prove adequate, there still remains another factor which is recognized in all periodical examinations by insurance departments and due credit given therefor, but which is not provided for in the annual statement, namely, those recoveries which are actually made by all companies in the year succeeding the annual statement year. This constitutes a factor of safety, inasmuch as both the unreported claims and the uncollected recoveries relate to an unknown quantity. Hence, if a company is required to set up a safety reserve for a totally unknown and unascertainable liability, by the same token it should be allowed credit for that equally unknown asset, recoveries on closed claim cases.

Under the present annual statement requirements, it is necessary for each company to itemize its known bonding claims in schedules "J" and "K", and the new unknown reserve is included in schedule "K" to make the total estimated liability prove with the financial exhibit, and consequently the old unknown reserve is carried into schedule "J" and therefore is included in the total reserve entered in schedules "G" and "O".

As Schedules "G" and "O" were obviously originally designed for the purpose of comparing the original reserves with the subsequent developments, the real value of such a test would be on known cases. As the unknown reserve is also included, two reserves are represented in the total reserve column, but developments are posted as they apply to the known reserve only, and consequently an over-estimation should result.

If the assignment of latent losses were practicable, this inconsistency could be remedied in one of two ways:

1st. The descriptive headings of Schedules "J" and "K" could be changed so as to assign to Schedule "J" all cases reported during the current year but on which the date of loss was in a prior year, thereby combining the unknown cases with the known cases in Schedules "G" and "O".

2nd. A supplementary Schedule "J" could be adopted for the listing of delayed losses, the reserve for which could be tested out in additional columns in Schedules "G" and "O".

The first would confuse the real purposes of these schedules by vitiating the comparison of the reserve on known cases with developments. The second would tend to lessen their value by throwing the actual reserve on delayed cases out of the total reserve; otherwise these cases would have to be followed through in two sets of schedules, the developments being posted against the incurred but not reported claim reserve in the first instance, and again against the reserve after it is put up. Either method would add considerably to the work on the schedules, for the sole purpose of determining how accurately a formula reserve answered the purposes of the individual company. Any company that desires to make this test can do so just as advantageously in its own system, but there is not sufficient matter involved to make this analysis an annual statement requirement.

Therefore, neither of these remedies should be considered, and the inconsistency now existing should be eliminated by

dropping the incurred but not reported reserve from all the schedules.

It is submitted that the formulary method of setting up this reserve should be universally adopted, thereby placing all companies upon the same plane as to this reserve, and eliminate any concern as to whether one or the other is mistaken in its individual judgment. That by so uniformly requiring every company to put up what seems a reasonably adequate reserve for a contingency which is never known, the subject can be dropped without further worry, and the schedules of the annual statement can be confined to the complete analysis of reported known losses which can be definitely valued.

THE FUNCTION AND PLACE OF THE STATISTICAL DEPARTMENT IN A MULTIPLE LINE CASUALTY COMPANY

BY

JOSEPH LINDER

At some point in the growth of any multiple line casualty company it becomes necessary to consider what form of functional organization is most economical and most efficient for the purpose of producing statistical material and results. This paper constitutes an inquiry into the place of statistical work in the functional scheme of a multiple line casualty company.

It is no longer necessary to argue that statistics represent the fundamental basis of good insurance management or that certain statistics must be produced in any event because of the requirements imposed by state supervision. These are facts which most companies recognize as creating the necessity for doing some statistical work. It is not so evident, however, to some companies that the best way in which to develop an efficient means of getting out statistical data is (1) by eliminating statistical operations from the daily duties of other departments, and (2) by creating a separate unit having sole responsibility for such work and coordinated to the greatest possible extent with the work of the other operating units of the company.

An analysis of the statistical and related records maintained by multiple line casualty companies makes it apparent that for performing this function there is a varying practice as to the organization set up. For the most part, the mechanism seems to have had an evolutionary growth which has been influenced by requirements of the moment rather than by any formulated plan. In some companies all the work of statistical record making and reporting is concentrated in the department which maintains the books of account, but no differentiation is attempted between the accounting and statistical operations performed by the individual clerks. In other companies the function of statistical record making and reporting is divided among the departments which require the use of such data, thus decentralizing the operations incident to the performance of this function. In still other companies, a separate department is set up for the purpose of compiling, analyzing and interpreting

statistical data. The name by which such a department may be called, whether accounting, statistical or actuarial, is of no particular importance. The significant point is the recognition of a distinct function by its allocation to a definite place in the departmental structure.

FUNCTIONS OF MAJOR DEPARTMENTS

In most instances the major operating departments of a fair sized company are:

- I. Underwriting
- II. Claim
- III. Accounting

As the growth of the individual company proceeds, certain branches of activity which had hitherto been subordinated, are separated out and organized into departments. This is very common, for example, in the case of engineering and inspection, sales, payroll audit, and statistical.

The classification and selection of risks is the work of the underwriting department. The claim department undertakes the task of investigating and adjusting claims. The accounting department cares and accounts for the receipts and disbursements of the business. In addition to safety work, the engineering and inspection department serves as an adjunct to the underwriting department in determining the classification of risks. Production work is handled by the sales department and the payroll audit department undertakes the physical examination of the assureds' records for the purpose of determining the proper premium in many lines of business.

The foregoing outline is limited to the basic functions of the various departments. In actual practice each department acquires various collateral functions. This is very common, for example, in the case of the claim and payroll audit departments an important collateral function of which is to assist the underwriting department in the classification and selection of risks.

As a foundation for discussion of the place of the statistical department, let us first consider certain records which are utilized by some of the foregoing departments in exercising their basic functions.

RECORDS UTILIZED BY MAJOR DEPARTMENTS

The underwriting department in exercising its function of classifying and selecting risks and determining the premium therefor is concerned with the loss experience of the risk (individual risk experience) and the application of the various rating plans. This department is also interested in the general experience of the company on similar risks (classification experience).

The claim department, in addition to investigating and adjusting claims, usually undertakes to estimate the incurred cost on unliquidated claims for the purpose of ascertaining the reserve liability of the company. These individual estimates of incurred loss are also utilized for individual risk experience, classification experience and other experience purposes.

The engineering and inspection department in exercising its function of accident prevention is concerned with the number of accidents occurring on a risk during stipulated calendar intervals per unit of exposure (accident frequency) and the relative cost of these accidents (accident severity). As a matter of service to policyholders, many companies keep track of the aggregate time lost from work due to injuries to employees and make an analysis of accidents by cause of injury.

The sales department in dealing with production of business is concerned with quantitative and qualitative agency data compiled according to individuals and territories. This department wishes to know the volume of business produced by an individual (new and renewal) during calendar periods by line of business and the loss producing character of that business.

The accounting department in addition to exercising its function of caring and accounting for the receipts and disbursements of the business, prepares periodical statements as to the financial status of the business for internal purposes (statement of condition) and external purposes (annual statement, tax returns, etc.). To fulfill these requirements there must be recorded certain accounting summaries. The more important of these summaries are analyses of premiums written and losses paid by line of insurance, character of entry and state. In addition, compensation and liability premiums, losses and loss expenses must be currently analyzed by policy year to compile Schedule P of the annual statement. For certain lines of insurance, loss

payments, salvage receipts, loss reserves, etc., must be analyzed for the purpose of preparing other annual statement schedules. Expense disbursements must be summarized into accounts and departments. Inventories must be made to determine the reserve for outstanding losses and uncollected premiums over ninety days old. At such times also the unearned premium reserve must be obtained.

FUNCTION OF THE STATISTICAL DEPARTMENT

The foregoing analysis has dealt with the statistical work necessary for the functioning of certain major operating departments. In addition, and independent of the functioning of these operating departments, certain statistical requirements must be met. One of the most important of these is the furnishing of reports to state departments and bureaus. This item alone has trebled and quadrupled the labor of former years, with a compensating factor, however, in that executives have learned to utilize such data for the conduct of the business.

Special investigations must be conducted as to the progress and condition of the company. Among such investigations may be mentioned the effect of rate changes on the company's rate level for the various lines of insurance, forecast of loss conditions, and other studies with which the actuary or statistician is primarily concerned. Executives must be furnished with data for the purpose of administrative control. Budgetary studies, plans for expanding the company's operations, control of branch offices, etc., fall into this group.

It is apparent that all of this statistical work represents a distinct function which by its nature differs from the basic functions of the various operating departments, *i. e.*, underwriting, claim, etc. It therefore follows that the greatest efficiency can only be secured when this necessary function is assigned to a certain part of the organization properly fitted to perform it.

Moreover, from this review of the statistical work required for internal and external purposes, it is seen that (1) the bulk of the compilations are derived from common original data (premiums, losses and expenses), and (2) the common data need be subdivided and summarized for a variety of purposes. With the development of punched cards and mechanical tabulating equipment

(with which the readers of this paper are presumed to be familiar) there exists an economical means for taking advantage of the fact that the statistical operations deal with common data.

The facts of the existence of (1) a distinct function, and (2) the means of economically performing this function, furnish the reason for creating a statistical department whose basic function is to centralize the statistical work necessary for the conduct of the company's business. In the following discussion, the existence of a statistical department will be assumed.

RELATIONSHIP OF STATISTICAL DEPARTMENT TO OTHER DEPARTMENTS

That the statistical department undertakes tasks which bind it very closely to other departments will be brought out in the following discussion.

Underwriting Department

Compensation and Liability Lines Subject to Audit.

The relationship of the statistical department to the underwriting department with respect to compensation depends in large part on whether it is the practice of the company to compile its experience data currently or upon the expiration of the policy. When the latter plan is followed, the individual risk experience record may be utilized as the punching medium for compiling experience data, and is therefore usually located in the statistical department proper. Where the practice of compiling experience data from current transactions is followed, the punching medium is usually a premium voucher or a loss voucher (containing the requisite coding). The premium voucher may thereafter be utilized for the individual risk experience record, but an incurred loss record must be resorted to for loss information. The question of handling loss records will be again discussed in considering the relations of the statistical department with the claim department.

On public liability lines subject to audit, the same procedure usually holds as for compensation, except that the liquidation of losses does not require a large number of payments.

Lines Not subject to Audit.

For the automobile coverages, liability lines not subject to audit, fidelity and surety, plate glass, burglary, and accident and health, the plan of compiling experience data on the basis of current transactions is usually followed. The problem here is not complicated by the large number of losses occurring on a single risk (except on automobile fleet risks and certain liability lines) and therefore the compiling of individual risk experience is usually an indexing operation.

Claim Department

The statistical department necessarily has a very close relation to the claim department, in that the latter originates incurred loss records and loss payment records. Loss payments usually enter into the accounting department control before reaching the statistical department. The contact arising from the relationship between the statistical and claim departments is usually a prolific source of annoyance in most companies, especially those companies which compile experience data on the current basis. A loss payment to the claim department represents nothing more than a payment to a policyholder or claimant in accordance with the terms of the policy contract. It is usually without significance as an item of statistical data. On the other hand, the statistical department frequently fails to take into consideration the fact that the basic function of the claim department is the settlement of claims. Such a condition is significant in indicating a confusion of functions.

An important tabulation to be considered is that of the loss reserve. This is often undertaken by the statistical department, and for that purpose there is maintained an individual loss card to which payments and periodic estimates of incurred cost are posted. This practice results in duplication of a primary record of the claim department, which duplication is sometimes justifiable on the grounds of facilitating the routine of the two departments. The loss card also serves as a basis for obtaining an analysis of losses outstanding, where the practice of compiling experience data on the current basis is followed. The information with regard to estimates and payments, which appears on the loss card furnishes the means of reviewing the adequacy of the company's loss reserve.

Accounting Department

The accounting department in its normal functioning relies upon the statistical department in two ways. First, it receives from the statistical department distributions and analyses over which it exercises ledger control, such as the distribution of premiums, losses, and commissions by lines of insurance, the analyses of compensation and liability premiums and losses by policy years, and the summarization of paid expenses into accounts and departments. Second, it relies upon the statistical department for certain items over which it exercises no ledger control, such as loss reserves. The relations of these departments are influenced by the methods used in the writing of the company's business, whether direct or agency.

If the company follows the direct writing plan, the statistical department usually confines its work on premiums transactions to analyzing the total writings. The total as analyzed is controlled by the accounting department in its maintenance of policyholders' accounts. (The use of punched cards for policyholders' accounts in a non-agency company, while a possibility, has not progressed sufficiently for the maintenance of these accounts to be considered in the realm of the statistical department. With the rapid strides in the development of machine bookkeeping there has been no pronounced trend in the direction of maintaining policyholders' accounts on punched cards.)

If the company conducts its business on the agency plan, its agency accounting may be conducted by means of punched cards. In this event the statistical department serves a double role. It summarizes transactions by agents for the maintenance of their accounts. It thereafter analyzes the premium control in a manner similar to that for the non-agency writing company.

Sales Department

The sales department looks to the statistical department for tabulation of premium writings by agents and territories, subdivided by lines of insurance. To estimate the loss producing character of that business incurred losses must be similarly analyzed and earned premiums calculated. Where the volume of business is sufficiently large, policy year exhibits of earned premiums and incurred losses are prepared.

PLACE OF THE STATISTICAL DEPARTMENT

It has been our endeavor to indicate from an analysis of the work performed in a multiple line casualty company the various ways in which statistical material originates and also the varying uses to which such material is put for the functioning of the various departmental activities (including the executive and administrative branches).

One of the outstanding features of casualty insurance development, as contrasted with that of fire insurance, for example, has been the extent to which statistical data have been relied upon by individual companies, by rate making associations with which they are affiliated, and by state departments. One would naturally suppose under these circumstances that every multiple line casualty company which has attained any measurable degree of growth would have organized a separate statistical unit with suitable specialized personnel. On the contrary, the internal organization of companies is more frequently the result of haphazard growth rather than of the carrying out of a preconceived plan. As a consequence, statistical functions have been more or less lost sight of as a specialized line of activity and the statistical work has been permitted to grow up piecemeal as a part of the functions of several departments whose primary purpose is something other than that of furnishing accurate statistical information. What we have tried to point out in this paper is that it is more economical and efficient to separate the statistical duties from those departments whose real function is to administer the business of the company rather than to analyze it.

If the activities of the statistical unit are subordinated to those of another operating unit, the principal interest of which lies in another direction, there will be a marked tendency to neglect the statistical function in favor of some other major function. There will also be imposed an entirely different viewpoint which will militate against the efficient and economical handling of statistical work. This is for the reason that an opportunistic attitude will be adopted while statistical work from its very nature does not permit of such an attitude but must be planned and directed with an eye to the future. It seems obvious that in every multiple line company a statistical nucleus should be created even though at first it may not appear advisable to give it the status of a coordinate department.

The entire situation can be summed up very briefly by pointing out that it is no longer possible to dodge the fact that a considerable amount of statistical work has to be done and is being done by the home office staff of multiple line casualty companies. Moreover a review of the historical development of the importance of such statistical work over the past ten years will show that company executives have become well aware of the essential value of statistical work and largely depend upon its results as a guide to the formulation of business policies. This is to say that statistics, while formerly regarded as a necessary evil, is now looked upon as necessary and productive. But in the mechanical handling of statistical work there is still room for considerable improvement which can be effected largely by a reasonable centralization of the statistical functions. The extent to which centralization is desirable must be determined after a close study of inter-departmental relationships since the statistical department, because of its position in the flow of records, is an important connecting link in the various departmental activities. Such a study should be made with a view to reaching definite decisions on the relative position which the statistical unit should occupy and as to the proper time for it to assume the status of a coordinate department, independent in its responsibility to the administration.

THE POSITION OF THE REINSURANCE COMPANY
IN THE CASUALTY BUSINESS

BY

WINFIELD W. GREENE

The rapid growth of the casualty business is a familiar phenomenon. We are informed upon competent authority that from 1890 to 1926, the net premium income of casualty companies in the United States grew from less than \$8,000,000 to more than \$800,000,000.

It may not be so generally known that, in recent years, the volume of reinsurance premiums in the casualty field has increased relatively more rapidly than has the net premium income.

The writer is not aware of any published figures in which reinsurance data are combined for any considerable number of companies.

However, the "New York Insurance Report" shows for each casualty company not only net premiums in force but also gross premiums in force and reinsurance premiums in force, at the end of the calendar year. This enables one to make a comparison as respects the business in force at the end of the year between reinsurance premiums and net premiums.

In order to gauge the growth of casualty reinsurance both absolutely and relatively during recent years, the writer combined the data as to premiums in force for certain companies doing business in the State of New York during the years 1915 and 1925 respectively. The combined figures are shown in Exhibit "A". Certain strictly reinsurance companies were excluded from the comparison, as well as companies having, in either year, a premium volume less than \$1,000,000. Companies doing a "one-line" business, such as strictly accident and health companies, were also excluded. Mutual companies were omitted because their business has thus far been confined to the compensation and liability fields, where the volume of reinsurance is relatively small. Data as to non-cancellable accident and health business were also omitted on the ground that this class of business is properly an adjunct of life insurance rather than of casualty insurance.

The most significant fact revealed by the comparison was the increase in the relative volume of reinsurance. At the end of

1915, for the companies observed, net premiums in force were \$112,000,000, in round figures, and reinsurance premiums in force were approximately \$3,900,000. The reinsurance premiums in force were only $3\frac{1}{2}\%$ of the net premiums in force. At the end of 1926, the corresponding figures were \$438,000,000 and \$36,500,000 respectively. The total volume had increased 290%, whereas the volume of reinsurance had increased more than 800%, the ratio of reinsurance to net premiums having increased from 3.5% to 8.3%.

The entire volume of reinsurance premiums for 1925 was undoubtedly substantially in excess of the reinsurance premiums in force at the end of that year for the observed companies. If we take the ratio of reinsurance to net for 1925 based on premiums in force for the companies observed, *viz.*, 8.3%, and apply it to the total casualty premium volume, we should arrive at the total volume of reinsurance premiums within a reasonable margin of error.¹ This method indicates approximately \$50,000,000 as the volume of reinsurance premiums in 1925 for companies admitted to New York State and not less than \$60,000,000 as the countrywide volume for 1926.

If we look at the figures for the several kinds of insurance as shown in Exhibit "A", it will be noted that for almost all lines the ratio of reinsurance to net premiums increased substantially from 1915 to 1925. The exceptions are compensation and plate glass, where the reinsurance arrangements (at least to the extent revealed in the published figures) must have been confined to the excess type, and miscellaneous property damage (including sprinkler), where the reduction in the ratio of reinsurance to net premiums is very slight.

The figures we have deduced indicate conclusively that in the casualty and surety field reinsurance is becoming a problem of more and more importance. This holds good for the business

¹In the absence of actual figures, it is, of course, open to conjecture whether the ratio of reinsurance premiums to net premiums indicated for the observed companies holds for other companies admitted to New York State and for companies not doing business in that jurisdiction. However, in the data taken off by the writer, no account was taken of the business of an important stock company co-insurance pool, which is essentially a reinsurance arrangement. Furthermore, there is a considerable volume of reinsurance on the "excess" basis where little, if any, "premiums in force" are shown at the end of the year. For these reasons, it is believed that the estimate we have given of total reinsurance premiums is conservative.

as a whole and for the great majority of individual companies even though it may not hold for some few of the largest companies.

The question which next presents itself is: "Has the growth of reinsurance companies kept pace with the growth of reinsurance?"

In 1915, there was one casualty reinsurance company doing business in the State of New York and its premium income was \$954,000. In 1925, there were four such companies with a combined premium income of approximately \$10,790,000. If we take the entire volume of reinsurance business for New York admitted companies as \$5,000,000 in 1915 and \$50,000,000 in 1925, we find that during the ten years, the proportion ceded to strictly reinsurance companies² had increased but very little, *viz.*, from 19.1% to 21.6%.

These figures cannot be said to indicate that casualty reinsurance companies in the United States have fully realized their opportunity, for they undoubtedly still remain, regardless of any change in conditions since 1925, only a minor factor in the reinsurance situation. For this reason, the remarks in this paper will be directed very largely towards the writer's concept of the proper position of the reinsurance company rather than towards present day conditions.

Before presenting any views as to the ultimate functions of the reinsurance company in the American casualty business, it will be necessary to introduce some description of conditions and practices as they now are. The aim will be to make the descriptive matter as brief as possible³ but adequate to an understanding of the current status and of the ideas which later will be set forth in this paper.

EVOLUTION OF THE TREATY

In the unfolding of human society, archaeologists recognize the epochs of stone, of bronze and of iron. In point of time, these epochs are relative rather than absolute. The shores of the

²We have excluded from "strictly reinsurance companies" any companies known to write a substantial volume of direct business. However, we have not excluded any company from the reinsurance category merely because it writes excess cover for self-insurers.

³For a comprehensive description of reinsurance in the compensation and liability lines, see "Distribution of Shock Losses in Workmen's Compensation and Liability Insurance", G. F. Michelbacher, *Proceedings*, Vol. VII, page 235.

Mediterranean sustained a society employing weapons and implements of bronze before Northern Europe had emerged from the stone age; and America remained in the stone age many centuries after the inception of the age of iron in Europe.

Similarly, we may discern an evolutionary tendency in casualty reinsurance; and this tendency holds even though progress along the evolutionary path has not been uniform throughout the business. The principal gradients along this path may be described as follows:

1. *The Facultative Stage.* In this stage, there are no comprehensive reinsurance arrangements (treaties) between companies. The underwriter "places" reinsurance, when and as the spirit moves him, with such companies (usually "direct-writing") as will accept it. This stage, although the lowest in the development of casualty reinsurance, still prevails widely throughout the business, particularly in the fidelity, surety and burglary lines.

2. *The Open Treaty Stage.* This is a status in which the company has comprehensive and permanent reinsurance arrangements (treaties) with one or more other companies (direct carriers and/or reinsurance companies) outlining a definite procedure for "ceding" reinsurance. The cessions made are recorded in a list (bordereau) transmitted to the reinsurer at stated intervals. In treaties of this general type, there is considerable variation as to the freedom accorded the ceding company as to what risks are to be reinsured and to what extent. Almost invariably if a risk is to be reinsured at all, the ceding company must "retain" a portion bearing not less than a stated ratio to the amount of reinsurance ceded. However, the salient characteristic of the open treaty is the discretion allowed to the direct carrier, and this discretion is almost invariably very material. Typically where a risk is regarded as particularly desirable, the ceding company may refrain from placing any reinsurance under the treaty, keeping all of the risk for itself or keeping the major portion and placing the remainder facultatively. On the other hand, where the risk is manifestly undesirable, the ceding company is in a position to retain only its minimum, if it so desires, give the treaty company its maximum proportion and place any remaining "surplus" facultatively. In some cases, the reinsurer under such a treaty has the right to object to or cancel individual risks, but such a provision, where it is included, is of little value because of the

relatively slight information which the reinsurer possesses as to the relative quality of the risks. Under the open treaty, the reinsurer's only protection is a desire on the part of the ceding company to develop a permanent relationship with the reinsurer, and history records that in many cases the "dominant wish" of the ceding company has been an immediate profit at the expense of the reinsurer rather than such a permanent relationship. The open treaty is still the prevailing type in the fire reinsurance business⁴ and the earlier treaties in the casualty business follow this pattern probably because of fire insurance precedent.

3. *The Fixed Treaty Stage.* In this stage, the reinsurer's interest in each risk proceeds automatically from the terms of the treaty. Before he writes a given risk, the underwriter knows the amount of his company's retention and the extent of the reinsurance. The fixed treaty enables the underwriter instead of dissipating his time and energies in a "swapping" contest with his competitors to think of his problems on the wholesale basis. From the administrative standpoint also, the fixed treaty has marked advantages, many of which have not yet been fully developed.

SHARE, EXCESS AND SURPLUS

There are two forms of reinsurance cover, namely, "share" and "excess".

On the share basis, the reinsurer assumes a stated proportion of the entire risk. This proportion applies to the premium and to the loss, if any, as well as to whatever salvage or other recoveries there may be.

On the excess basis, the reinsurer is not involved in any loss except to the extent to which it is in excess of a stated amount. Since, in most forms of insurance, the greater number of losses are small as compared to the total amount of insurance, under the excess plan, the reinsurer's premium is not in direct proportion to its maximum liability. An example will clarify the distinction between the two forms.

Burglary reinsurance is sometimes on the share, sometimes on the excess basis. Let us suppose a policy for \$20,000 in amount

⁴"The System of Treaty Reinsurance in Fire Insurance", H. Ernest Feer, published 1926, by the Insurance Society of New York.

on mercantile open stock, the premium for which is \$340.00. Let us assume that the reinsurance is on the share basis and that the carrier retains \$10,000, ceding the reinsurer an equal amount. In this case, the premium of the reinsurer and that of the ceding company would be the same, *viz.*, \$170.00. Under this policy there occurs a loss amounting to \$15,000, and later part of the goods are recovered, resulting in salvage to the extent of \$3,000. Obviously, the ultimate net loss under the policy is \$12,000, of which the reinsurer bears exactly one-half, or \$6,000.

On the other hand, if this risk had been written on the excess basis, let us say with a retention of \$10,000 on the part of the ceding company with respect to any loss, the reinsurer's premium for this particular policy would have been very much less than half the total premium, say not more than 10%, or \$34.00. Its share in this particular loss would have been \$2,000, *i. e.*, the amount by which the ultimate net loss exceeded the direct-writing company's retention, as under the excess plan all salvage is applied in reduction of a loss before determining the reinsurer's share.

"Surplus" reinsurance is sometimes confused with excess. In fact, in the fire insurance business, the term "excess" is evidently employed when surplus reinsurance (at least from the casualty man's viewpoint) is really meant.⁴ In the proper use of the word in the casualty business, "excess" relates to the amount of the loss, not to the total amount of the policy.

Surplus reinsurance in the casualty business is merely share reinsurance wherein the extent of reinsurance depends on the size of the policy.

Suppose, for example, the direct-writing company decides to retain all of its burglary policies which do not exceed \$10,000 in face amount; that half of any amounts between \$10,000 and \$25,000 shall be reinsured; and that all of any amounts in excess of \$25,000 shall be reinsured. Under this arrangement, the amount by which the face of any policy exceeded \$10,000 would be "first surplus" up to a maximum of \$15,000; and the amount by which the face of any policy exceeded \$25,000 would be "second surplus".

In the case of the risk which we have described, the reinsurer's interest would be represented by half of \$10,000, *i. e.*, \$5,000, as its proportion of the face of the policy. The reinsurance pre-

mium would accordingly be one-fourth of \$340, or \$85, and its share of the ultimate net loss would be one-fourth of \$12,000, or \$3,000.

It is obvious that the excess form of cover is feasible only for those kinds of insurance where losses equalling or approximating the face of the policy are the exception rather than the rule. If we refer again to Exhibit "A", it will be noted that for liability, compensation, plate glass and automobile property damage, the reinsurance premiums are small as compared with the total volume of business. These particularly are the lines where excess reinsurance applies. It applies also to some extent in burglary. The low ratio of reinsurance to total premiums in auto collision may be accounted for by the small amount at risk in the individual case.

DIVERSITY OF REINSURANCE ARRANGEMENTS

It can truly be said that in casualty reinsurance there are at present no generally accepted standards of principle or of practice.

The facultative and the fixed treaty forms, as well as to some extent the open treaty, continue to exist concurrently not only for a given kind of insurance but also in a single direct-writing office.

Aside from this variation in the type of reinsurance arrangement as between companies (or other entities), there is a still further variation in the very structure of the reinsurance relationship.

It is entirely conceivable that all of the following arrangements may be found in a single direct-writing office to-day:

1. Facultative reinsurance with other direct-writing carriers.
2. Co-insurance with a group comprising other direct carriers.
3. Reinsurance with a pool composed of direct carriers.
4. "Reinsurance" with a "company fund".
5. Treaties with other direct carriers.
6. Treaties with reinsurance companies.

A "pool" is an agreement entered into by several companies whereunder each company assumes a stated share, both of premiums and of losses, with respect to a certain "portfolio". The following are examples of such portfolios:

1. The entire amount of compensation or liability risks written by pool members in certain "extrahazardous" classifications. (The best known pool of this type writes "prohibited risks" in liability and compensation insurance and is conducted on the co-insurance principle, *i. e.*, the obligation is "joint and several").

2. Cover on the excess basis for losses exceeding stated limits for certain kinds of insurance written by pool members and/or by other carriers.

3. Coverage on the share basis of surplus lines over and above stated retentions for certain kinds of insurance written by pool members and/or other carriers.

A pool is an association of companies determined by contract and occupying the same relative position as a reinsurance company. It has certain disadvantages which will be touched upon later.

The "company fund" is a device whereby "on paper", at least, a certain amount of "reinsurance" is "ceded" by a given underwriting department to the fund. The fund account is kept as if the fund were a reinsurance company, *i. e.*, the fund is credited with certain premiums and charged with certain losses and the showing of the accident and health, the burglary or the fidelity and surety department of the company is amended accordingly even though in point of fact the insurance corporation itself actually sustains all losses charged to the fund.

THE ACCOUNTING CONTACT BETWEEN THE CEDING COMPANY AND THE REINSURANCE COMPANY

The procedure in reporting premiums and losses to the reinsurance company is, in general terms, defined in the treaty, but in detail it is largely a matter of practice.

Reporting of Premiums. As far as premiums are concerned, the most generally prevailing practice is to report each risk on a "bordereau" (Exhibit B). It is customary for the treaty to provide that bordereaux relating to business written by the ceding company in a given month be filed with the reinsurance company not later than the 20th of the ensuing month. In many cases, however, and particularly where the account is a large one, the bordereaux are transmitted as often as weekly.

It will be noted that the bordereau includes enough data ("Insured or Principal", "Bond or Policy Number", etc.) to

definitely identify each risk. It is possible to glean some idea of the character of the business by inspection of names, geographical locations, classes and amounts of insurance, although such a scrutiny is not at all comprehensive from the underwriting standpoint. Inspection of the bordereaux does reveal, however, whether the company's retentions and the amounts of reinsurance are in accordance with the treaty; whether the reinsurance company's premium is in proper ratio to the total premium; and whether the cessions are being made with promptness.

Exhibit C is the corresponding form for cancellations. In the first column is shown the original cession number to enable the reinsurer to determine the period of the reinsurance and to assure itself that the return premium is in proper proportion to the original premium of the policy. It is also of importance for the reinsurer to verify the fact that cancellations are being reported promptly and that there is not an undue proportion of "flat" cancellations put through late in the policy term. On the cancellation bordereaux it is necessary to show the original premium as well as the return premium in order that a proper deduction may be made from the premiums in force for purposes of the unearned premium reserve.

The extent of detail which should be required in reporting premiums under treaty to a reinsurance company is at this time very much an open question. The bordereau is a legacy from the facultative and open treaty stages of reinsurance. In these earlier stages a bordereau is essential since such a detailed list is the only method of determining the extent of the reinsurer's liability.

The bordereau is still the prevailing procedure in reporting premiums to reinsurance companies, partly because of custom, partly because the treaties for many kinds of insurance are still largely of the "open" type, and partly because in many cases the reinsurance company itself is required by its retrocessionaires⁵ to furnish bordereaux.

The expectation is justified that with the increasing prevalence of the fixed treaty, reinsurance companies will approach a time when it will be possible to do away with bordereaux altogether.

⁵"Retrocession" means "reinsurance of reinsurance". Hence "retrocessionaire" means an entity accepting retrocessions from a reinsurer.

As already indicated bordereaux checking is limited as a means of review of business from the underwriting standpoint and it is also a most inadequate means of determining whether the treaty provisions as regards the ceding of reinsurance have been uniformly carried out by the direct writing company. Practical experience indicates that in the interest of both parties to the treaty, the home office records of the ceding company should be audited from time to time by the reinsurer, since such audits invariably develop facts of material interest to both. The extent of such auditing depends, of course, upon conditions encountered in the individual case.

Since auditing is necessary, the justification for the clerical burden of a detailed bordereau boils down to (a) the determination of the reinsurer's liability and (b) satisfying the requirements of retrocessionaires. Both these reasons for the use of bordereaux can eventually be eliminated by applying the fixed treaty principle to both direct reinsurance and retrocessions.

This condition is already being realized in certain lines. Bordereaux have already been done away with to a certain extent, particularly in the liability business. In this line the reinsurer's obligation is almost invariably definitely fixed by the treaty. Accordingly the reinsurance company in many cases accepts from the ceding company in lieu of a bordereau (which constitutes merely a reiteration for each risk that the ceding company is retaining certain set limits and ceding the excess) a monthly summary of writings (Exhibit D) and of cancellations (Exhibit E).⁶ This summary gives all the data necessary for accounting purposes, including the determination of the unearned premium reserve. The clerical burden of preparing bordereaux is eliminated from the office of the ceding company, and the reinsurer, relieved from the more or less stultifying (because inadequate) process of checking bordereaux, confines its verification of the carrying out of the treaty to an audit of the ceding company's home office records.

Recording of Losses. From every standpoint it is essential

⁶This summary may be merely one copy of a list printed in duplicate on the "printer tabulator", the machine employed in statistical departments for the mechanical tabulation of data. In this case, the clerical labor due to the recording of reinsurance premiums is reduced to "rock bottom".

that the reinsurer be kept informed of all facts bearing upon the extent of its liability in connection with actual claims and potential losses.

As soon as the ceding company has notice of any event which may result in claim liability on the part of the reinsurer, a preliminary loss advice (Exhibit F) is mailed to the reinsuring company. This enables the reinsurer to establish a proper claim reserve. Changes in reserve are reported on special form (Exhibit G) and when the case is finally closed the amount of loss and the reinsurer's share are also reported (Exhibit H).

This procedure puts the reinsurer in touch with the claim situation at its inception and keeps it informed as to developments. It also enables the reinsurer to supplement the information originally furnished by the ceding company through correspondence or otherwise.

In the properly conducted reinsurance office all claims notices are scrutinized not by a clerk, but by an executive, who satisfies himself that his company has all the information it needs, not only in order to establish a proper reserve, but in many cases to assure the fact that the claim, if an important one, is receiving adequate attention in the claims department of the ceding company. Actual experience demonstrates that this is an important service of value to both parties to the contract.

Salvage recoveries are reported on a special form (Exhibit I). The ceding company is obligated to report salvage as soon as recovered. Here again practical experience indicates that the reinsurer should adopt a constructive rather than a passive attitude and that for those kinds of insurance where such recoveries are common, the status as to salvage should be inquired into periodically by the reinsurer and the case not closed until the reinsurer is definitely advised by the ceding company that all prospects of salvage are over. This practice not only protects the reinsurer but incidentally it assures the fact that the ceding company is not overlooking salvage possibilities.

The reinsurer, of course, maintains a file for each individual claim (except in those comparatively few cases where share reinsurance applies uniformly to all the business written by the ceding company for a certain kind of insurance). Correspondingly it maintains a record of claim reserves on all open cases, such reserves being constantly amended in accord with advices

received from the direct writing offices. In the course of months, certain inconsistencies are apt to develop between the records of the ceding company and those of the reinsurer and accordingly it has been found necessary in connection with the semi-annual financial statements (December 31st and June 30th) of the reinsurer to obtain from the ceding company a list of outstanding losses and loss expenses. (Exhibit J). This list is checked against the individual claim records of the reinsurer and any discrepancies are cleared through correspondence. Here again the efforts of the reinsurer are found to be of value not only to itself but to the other party to the contract, for in many cases this procedure has served to bring to the attention of the chief executives of the ceding company certain inadequacies in the procedure followed in their own office in the establishment of claim reserves.

Losses and loss expenses actually paid by the ceding company and properly chargeable to the reinsurer are reported monthly on a "loss bordereau" (Exhibit K), which contains the information necessary for accounting purposes, and enables the claim department of the reinsurer, upon reference to the treaty and the premium bordereaux, to verify the fact that the amounts charged have been properly determined.

The Account Current. (Exhibit L). This account is generally rendered, as in the case of bordereaux, within 20 days after the close of the month in which the business reported was placed on the books of the ceding company. In case of small accounts, quarterly or even yearly reportings are sometimes provided for.

Normally the account comprises a recapitulation of the reinsurer's share of the premiums written and the losses paid by the ceding company in the previous month with due allowance for commissions granted by the reinsurer to the ceding company. The treaty stipulates a date on or before which the account is to be paid. This provision varies, but in no case is the ceding company permitted to take more than 75 or 80 days in which to pay the account, as otherwise the reinsurer might be obliged to charge off a portion of these outstanding premiums as a non admitted asset (in accordance with the insurance department ruling making premiums over 90 days due a non admitted asset).

It is of course essential that in all cases the reinsurer verify the fact that the monthly account is absolutely consistent with

the supporting advices, namely the premium bordereaux (or "statement of reinsurance" where bordereaux are not required) and loss bordereaux.

THE REINSURANCE COMPANY'S STUDY OF EXPERIENCE

No reinsurance company can dispense with a frequent compilation of its own experience, by kind of insurance, and separately for share and excess.

A review of this experience at least quarterly, and preferably each month, will serve to locate "sore spots" in a general way.

However, what is even more important and of more general interest is the compilation of the experience for each treaty company, also by line, and separately between share and excess (Exhibit "M"). Such an exhibit should be prepared quarterly for all ceding companies, and in cases where there is any question as to the tendency of the account, as often as monthly. Ordinarily this exhibit will be prepared gross as to retrocessions, but where the outcome of the account is at all doubtful, it is desirable to show the experience net as to the effect of retrocessions; for on certain forms of insurance the reinsurer's direct profit may be divided with its retrocessionaires, whereas on other lines the loss is sustained either wholly or in greater part by the reinsurer alone.

The object of this review is, of course, to establish the account on a basis where the reinsurer has reason to believe that the tendency will be towards a profit. To this end, unfavorable experience on certain lines will be brought to the attention of the ceding company and negotiations undertaken either for a readjustment of the treaty or for a modification of the underwriting policy of the ceding company.

This procedure brings directly to the attention of the management of the ceding company not only how its reinsurance account is running but also to a very great extent just how successful its underwriting has proved to be. Such an exchange of views between the parties to the reinsurance contract is of value to the ceding company particularly because there can be no question of bias on the part of the reinsurer, who, on the one hand, wants to keep the account, but, on the other, is insistent that it shall be made to pay. In this respect, the interests of the ceding company and the reinsurer are to all intents and purposes identical.

* * * * *

We have seen how during the past decade in the casualty field reinsurance has grown tremendously, both absolutely and relatively, until now it constitutes one of the outstanding conditions and one of the most important problems of the casualty business. During this decade reinsurance companies have barely held their ground, transacting perhaps one-fifth of the total volume of casualty reinsurance.

The primitive facultative method and the old open treaty still hold sway in spite of the absolute increase in the volume of fixed treaty reinsurance. The casualty reinsurance situation remains a most heterogeneous one, facultative, inter-company, pool, company fund and reinsurance company arrangements existing concurrently and frequently in the same direct writing office.

Reinsurance is the occasion for a vast amount of effort on the part of executives, department heads, underwriters, claims men and accountants. It is also the occasion for a vast amount of clerical detail. This situation has been mitigated to some extent by the development of the fixed treaty, but neither in the matter of relieving the direct writing office of the burden of clerical and supervisory detail nor in that of constructive cooperation on the part of the reinsurer in handling both detail and general problems has the surface been more than scratched.

THE PROPER POSITION OF THE REINSURANCE COMPANY

In the opinion of the writer, no satisfactory solution of the reinsurance problem can be had without a more general adoption of the principle of the fixed treaty and a much wider extension of the activities of reinsurance companies. This means, more concretely, that with but few exceptions a given direct writing company should place *all* of its reinsurance with a single reinsurance company in accord with a comprehensive fixed treaty or group of fixed treaties. For the more important kinds of insurance, coverage extended by the reinsurer would be along the following lines.

1. For *automobile liability, public liability, employers' liability* and *automobile property damage* the coverage would be on the excess basis, the ceding company retaining primary limits commensurate with its financial capacity and underwriting policy. The reinsurer's premium would be the manual excess premium

subject to a commission allowed the ceding company as a contribution toward acquisition and home office expenses (it is customary for the reinsuring company to pay the taxes on premiums ceded to it). It would also be logical for the reinsurer to allow the ceding company a contingent commission in the form of a percentage of the underwriting profit realized by the reinsurer. Excess cover provided by the reinsurer would be limited only by the terms of the original policies of the ceding company.

2. *Miscellaneous property damage.* This is a relatively new form of insurance in which the rates are still a matter of conjecture and in which the indiscriminate writing of high limit policies is apt to prove disastrous. The excess plan just outlined would properly apply here except that the ceding company's minimum retention should be comparatively substantial and the reinsurer should be further protected either by a definite limitation as to its maximum liability or by a provision that the ceding company is to retain part of the entire excess over its minimum retention.

3. *Workmen's Compensation.* The reinsurance for this line would be on the excess plan, the ceding company retaining an amount per accident commensurate with its resources and underwriting policy. The rate for the reinsurance would be a flat percentage of the net premiums written by the ceding company and not subject to commission. Since this form of reinsurance is strictly a calamity cover, it is not properly subject to a contingent commission.

4. The plan just described for workmen's compensation may be applied to *burglary* and to *plate glass* insurance except that in these latter forms the reinsurance contract should specify the limit of the reinsurer's liability. This limit can be fixed at a point which will allow ample writing power to the direct carrier for its ordinary needs.

5. *Fidelity and surety* and *accident and health* would be written on the share basis. *Burglary* might also be written on this basis. The treaty would provide for a table of minimum retentions, according to the kind of insurance and the classification. As respects the surplus over its minimum retention the ceding company would retain a stated portion (not necessarily the same for all kinds of insurance or classes) and cede the remainder to the reinsurer. For certain kinds of insurance or

classes, provision might be made for "first surplus" and "second surplus", the ceding company retaining a substantial proportion of the first surplus and a lesser proportion (or none at all) of the second surplus. The reinsurer's premium would be that proportion of the total premium for a given policy which the reinsurance ceded bears to the face of the policy. This premium would be subject to a commission by way of contribution to the acquisition and general expenses of the ceding company, and for these forms a contingent commission based on the reinsurer's underwriting profits might properly be introduced.

* * * * *

The above outline is presented not as the only arrangement that might be made but merely to illustrate the lines which a comprehensive reinsurance plan might follow.

Obviously, the entire plan contemplates that the reinsurance company would have retrocessional facilities of a very broad scope, probably broader than any as yet developed by a casualty reinsurance company, particularly for accident and health, fidelity and surety, and burglary lines.

Besides being comprehensive, these retrocessional arrangements should be of a character which would not require the reinsurance company to maintain loss and premium reserves greatly in excess of its actual reserve liabilities; that is to say, they should be such as to permit the reinsurance company to take credit in its official financial statements for at least the major part of its retrocessionaires' share of the loss and unearned premium reserves. This implies that to the greatest extent practicable, the retrocessions should be placed with companies admitted to do business in this country. Obviously such a retrocessional market would be made up mostly of direct writing companies.

Such a plan can be worked out, the writer is sure, without involving any direct writing carrier in "doubling up" of its liability as respects coverage under its own policies.

Where the reinsurance is on the excess basis, the reinsurer would retain a substantial amount over and above the original retention of the ceding company. Where an individual loss in any line subject to excess reinsurance exceeds the combined retentions of the ceding company and the reinsurer, this second

excess would presumably be apportioned among certain insurance corporations, including direct writing companies, in accord with the retrocessional treaties severally contracted with the reinsurance company. Under this plan a given direct writing company might share in the second excess with respect to an accident where it sustained the primary liability. It is not likely that such cases would be frequent enough to constitute a serious objection to the plan.

For those lines where reinsurance is on the share basis, doubling up can be avoided by excluding from the retrocessions made to any direct carrier any portion of risks originating with such carrier. This is merely a matter of accounting procedure for the reinsurance company. The same procedure can be applied in the case of excess reinsurance if such a course is found necessary or desirable.

In certain forms of insurance, the "risk" and the policy are not identical in scope. This situation holds in the case of bank depositary business, where the real risk is the bank, not the individual depositary account; and in the case of accident and health insurance where the total amount of insurance carried by the assured, not any one policy carried by him, measures the risk. In such forms of insurance there is danger of directly overloading the reinsurer and of indirectly overloading direct carriers participating in retrocessional arrangements. The remedy for this is for the reinsurer to maintain a record of individual risks for these kinds of insurance, thereby detecting any such cases of overloading, and then adjusting them through facultative arrangements or otherwise.

BENEFITS OF THE PLAN

Under the plan we have outlined, reinsurance companies would become in American casualty insurance a much more stable and important factor than they are today.

The justification of the plan lies in the benefit which it holds for the casualty business as a whole.

1. *Simplicity.* It cannot be contended seriously that the present lack of standardization in reinsurance is conducive to the best interests of the business. A comprehensive and simple plan would release time, energy and money for constructive

effort in the development of the direct writing company's business. There would be more power available for propelling the ship. The chart would be more intelligible. Instead of several pilots to consult as to the supposed intricacies of the channel of reinsurance, there would be only one, viz., the reinsurance company.

2. *Actual Protection.* Centralizing reinsurance in one company having adequate retrocessional facilities would do away with the necessity of the company fund, which, after all, is self-insurance, not reinsurance. Furthermore, it would largely eliminate the facultative form of reinsurance, which, in many cases, cannot be said to constitute a satisfactory form of protection since it obligates the ceding company to accept in return other facultative reinsurance which may or may not be desirable. Similarly by eliminating pool arrangements, the able underwriter would be protected from his less capable competitor.

3. *Economic Soundness.* Any reinsurance arrangement which is not profitable to the reinsurer or reinsurers cannot be permanent, and impermanent reinsurance arrangements are always unsatisfactory. A reinsurance company has a substantial and permanent interest in making its own business pay, and a reinsurance company cannot make money unless direct insurance makes money. A reinsurance company, therefore, will not hesitate to point out to a direct-writing company anything which it believes interferes with their joint efforts toward developing a profitable business and under the suggested plan, the reinsurer would be in a position to know "what's what". In at least one well known pool arrangement, the absence of that direct economic incentive which is the very breath of life of the American casualty business has lately writ its unhappy history in characters of great size and sufficiently crimson hue.

The direct writing company's hope of a wholly satisfactory reinsurance arrangement lies in treaties with a strong, well managed reinsurance company, not in membership in a decentralized instrumentality for participation in the underwriting results of its competitors.

4. *Conservation of Premium Income and Insurance Capital.* The plan contemplates a more effective use of existing casualty insurance capital. Furthermore, it implies that the financial

resources of admitted casualty companies shall be fully availed of. When these resources have been used to the full in the problem of furnishing adequate covers to the American insurance public, it will then be logical and proper to employ the facilities afforded by "non-admitted" institutions.

The implication of the plan is not less business for direct-writing companies and more for reinsurance companies except perhaps relatively during a temporary period of readjustment. Ultimately, it implies that through a more effective use of the reinsurance company as an instrument in the service of the business, direct-writing companies will be able to carry the greatest volume commensurate with their resources both in the form of direct business and in the form of retrocessions.

EXHIBIT A.

Kind of Insurance	Premiums in Force					
	December 31st 1915			December 31st 1925		
	Reinsurance (1)	Net (2)	Ratio (1) + (2) %	Reinsurance (3)	Net (4)	Ratio (3) + (4) %
Accident.....	\$655,900.00	\$16,428,200.00	4.0	\$2,477,900.00	\$27,387,600.00	9.0
Health.....	376,500.00	6,935,800.00	5.4	895,100.00	11,138,900.00	8.0
Liability.....	162,800.00	28,969,500.00	.6	2,188,800.00	129,800,800.00	1.7
Compensation.....	101,900.00	19,210,200.00	.5	75,500.00	55,626,300.00	.1
Fidelity.....	423,500.00	5,598,800.00	7.6	7,828,000.00	32,844,800.00	23.8
Surety.....	1,372,300.00	13,219,000.00	10.4	14,278,300.00	57,521,000.00	24.8
Plate Glass.....	3,400.00	2,573,700.00	.1	3,800.00	12,941,200.00	.0
Burglary.....	682,500.00	5,423,300.00	12.5	5,598,000.00	34,287,700.00	16.3
Engine & Steam Boiler.....	77,900.00	8,500,500.00	.9	2,084,600.00	25,330,100.00	8.2
Auto P. D.....	100.00	5,121,200.00	.0	78,800.00	35,486,800.00	.2
Auto Coll.....				72,600.00	9,856,200.00	.7
Other P. D. & Sprinkler....	53,100.00	431,700.00	12.3	447,900.00	4,127,400.00	10.9
Credit.....				484,000.00	2,129,600.00	22.7
TOTAL.....	3,909,900.00	112,411,900.00	3.5	36,513,300.00	438,478,400.00	8.3

The companies included in the above table are as follows:

1915. Amer. Surety. Casualty Co. of Amer. Fidelity & Cas. Globe Indemn. London & Lancashire. Nat'l. Surety. New Amsterdam Cas. Preferred Accid. Royal Indemnity. U. S. Casualty. Aetna Acc. Aetna Life. Commercial Cas. Continental Cas. Fid. & Dep. Hartford Acc. Hartford St. B. Maryland Cas. Mass. Bonding. N. E. Equit. So. Surety. Standard Acc. Travelers Ind. Travelers Ins. U. S. F. & G. Empl. Liab. Gen'l. Accid. London Guar. Ocean Acc. Zurich Gen'l. Acc.

1925. Amer. Surety. Columbia Cas. Eagle Indemn. Fidelity & Cas. Globe Indemn. London & Lancashire. Metro. Cas. Nat'l. Surety. New Amsterdam Cas. N. Y. Indemn. Norwich Union. Phoenix Ind. Preferred Acc. Royal Indemn. Sun Indemn. U. S. Cas. Aetna Cas. & Sur. Aetna Life. Commercial Cas. Continental Cas. Fidelity & Dep. Hartford Acc. & Indemn. Hartford St. B. Indemn. of N. A. Indep. Indemn. Maryland Cas. Mass. Bonding. N. J. Fid. & P. G. Standard Acc. Travelers Indemn. Travelers Ins. Union Indemn. U. S. F. & G. Employers Liab. Gen'l. Accid. London Guar. & Accid. Ocean Acc. & Guar. Zurich Gen. Acc.

EXHIBIT B.

ended by _____

ALPHA REINSURANCE CORPORATION

..... Bord'x No.....
Class of Business

ailed 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Reinsurance Bordereaux

Included in a/c for month of

[illegible]

EXHIBIT C.

ALPHA REINSURANCE CORPORATION

Ceded by.....

Class of Business Bord'x No.

Mailed.....

Reinsurance Cancellation Bordereaux

Included in a/c for month of.....

[illegible]

Writings Sheet No. _____

Kind of Insurance _____

to

Share or Excess _____

Month of Entry_____192_

(Ceding Company's)

[illegible]

Note: Policy year separations required on Liability and Compensation only.

EXHIBIT E.

Cancellations and

Return Premiums Sheet No. _____

Kind of Insurance_____

to

Share or Excess_____

Month of Entry _____ 192_

(Ceding Company's)

[illegible]

Note: Policy year separations required on Liability and Compensation only.

EXHIBIT F.

PRELIMINARY LOSS ADVICE
FORMAlpha Reinsurance Corp.
Claim No.
Company's
Claim No.

to

ALPHA REINSURANCE CORPORATION

Mailed192.... Class of Business
Name of Principal on Bond or Assured on Policy
City State
Date of Loss192....

INSURANCE

Reinsured Policy No.
" " " "
Amount of Policy \$
" " " " \$
Amount of Retention \$
" " " " \$
Total Estimated Reserve \$

REINSURANCE

Bordereau No.
Cession "
Amount Reinsured with
Alpha Reinsurance \$
\$
Amount Alpha Reinsurance
Estimated Reserve \$

Brief Description of Nature of Claim

SIGNATURE OF REINSURED COMPANY

EXHIBIT G.

Notice
of
Change in Claim Reserve

.....Company

to

ALPHA REINSURANCE CORPORATION

.....Class of Business

Gentlemen:

Please be advised we have this day

increased	} claim reserve to \$
reduced	
withdrawn	

in connection with the following Policy Bond in which your Company is interested as Reinsurer
to the extent of.....(proportion).Principal }
or }
Assured }Our Policy }
or Bond No. }

Our Claim No.

Your Cession No.

Your Claim No.

Yours truly,

EXHIBIT H.

FINAL LOSS ADVICE
FROMAlpha Reinsurance Corp.
Claim No.
Company's
Claim No.Record of Reinsurance Loss and Loss Expenses
Claimed from

ALPHA REINSURANCE CORPORATION

Mailed 192.... Class of business Code.....
 Name of Principal on Bond or Assured on Policy.....
 City..... State.....
 Date of Loss 192....
 Period.....

INSURANCE

Reinsured Policy No.
 Amount of Policy \$.....
 Amount of Retention \$.....
 Total Loss \$.....
 Amount of Loss Expense \$.....

Brief Description of Nature of Settlement

Prospects of Salvage

REINSURANCE

Bordereau No.
 Cession
 Amount Reinsured with Alpha Reinsurance \$.....
 Amount Alpha Reinsurance Loss \$.....
 Loss Expense \$.....
 Does above payment close case?
 Yes or No

SIGNATURE OF REINSURED COMPANY

EXHIBIT I.

SALVAGE ADVICE
FROMAlpha Reinsurance Corp.
Claim No.
Company's
Claim No.

to

ALPHA REINSURANCE CORPORATION

Mailed 192.... Class of Business Code.....
 Name of Assured
 City..... State.....
 Date of Loss 192....

INSURANCE

Reinsured Policy No.
 Amount of Policy \$.....
 Amount of Retention \$.....
 Total Salvage \$.....

REINSURANCE

Cession No.
 Amount Reinsured with Alpha Reinsurance Corp. \$.....
 Amount Alpha Reinsurance Corp. Salvage \$.....

Prospects of Further Salvage

SIGNATURE OF REINSURED COMPANY

EXHIBIT L.

MONTHLY ACCOUNT CURRENT

.....Company For Month of.....19.....

IN ACCOUNT WITH

ALPHA REINSURANCE CORPORATION

	GROSS PREMIUMS			RETURN PREMIUMS			Net Premiums		Net Commissions		RECAPITULATION		
	BORDEREAU From To	AMOUNT		BORDEREAU From To	AMOUNT		AMOUNT		% Rate	AMOUNT			
ent											Total Gross Premiums		
Liability											Total Return Premiums		
Liability											Total Net Premiums		
yers Liability											Total Commissions		
men's Compensation											Gross Balance		
ty											Losses as per Bord		
B.											No..... to No.....		
/													
try													
: Alteration													
. Boiler													
e and Fly Wheel													
P. D.													
Collision													
. P. D. and Collision													
r Damage													
der													
TOTALS											BALANCE DUE REINSURER		

EXHIBIT M.

LPHA REINSURANCE CORPORATION

EXHIBIT OF EXPERIENCE

From _____ to _____ Compiled _____
 * _____ as to Retrocessions

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Kind of Insurance	Premiums Written	Premiums Earned	Losses Incurred				Loss Ratio (6) / (2)	Commis- sion Ratio	Commissions Earned (2)×(8)	General Expense (2)×—	Total Charges (6)+(9)+(10)	Under- writing Profit (2) — (11)	Profit Ratio (12)÷(
				Payments		Outstanding	Total Incurred (3)+(4)+(5)							
				Loss	Expense									
ess	Auto Liability													
	Other Liability													
	Compensation													
	Auto P. D.													
	Total Excess													
e	Accident													
	Health													
	Fidelity													
	Surety													
	Burglary, etc.													
	Total Share													
	Grand Total													

*Gross or Net, state which.

PREMIUMS AND RESERVES FOR DEFERRED PAYMENT PROTECTION

BY

JOHN M. POWELL

As deferred payment protection was clearly described before this Society by Mr. R. O. Davidson at the Fall meeting in 1926 (PROCEEDINGS, Vol. XIII, Page 80) brief reference only will be made to the nature of the benefits.

The contract is made between the creditor and the insurance company. Its purpose is to prevent the creditor from suffering any financial loss due to the accidental death or to the disability of any debtor who has purchased an article under one of the established time payment plans.

Accordingly these benefits are divisible into two main parts:

1. Accidental Death. In event of this contingency the liability of the insurance company is the sum of all monthly notes outstanding but not due at time of death.

2. Disability. In event the purchaser becomes totally disabled by either accident or disease the insurance company pays the creditor a proportionate amount of the monthly notes for the period of disability.

In this connection it should be noted that the amount paid does not depend upon whether the notes fell due during the period of total disability. For example, the debtor or purchaser may be ill for a period of one and one-half months. The amount to be paid by the insurance company (on the retroactive basis) would be equal to one and one-half monthly payments regardless of whether one note or two notes fell due during the period of disability.

Calculations are here made on the following two bases:

- A. Non-retroactive—No payments are made for the first fourteen days of any disability.

- B. Retroactive—Payments are made from the first day of disability but no disability of less than fifteen days' duration is covered.

Some time ago the question of rates on this plan of insurance was referred to the Committee of Five on Statistics of the Bureau of Personal Accident and Health Underwriters of which committee the writer is a member. The premium rates produced

here differ only slightly from those produced by the Committee. These differences are of a theoretical nature and will be referred to in due course.

In preparing any set of premiums the basic data upon which the premiums are based is extremely important. In the matter of Deferred Payment Protection, sufficient statistics are not available to determine what the correct pure premium should be.

Perhaps at the present time we could do no better than to use the available experience under accident and health policies of the Bureau of Personal Accident and Health Underwriters.

In 1921 the Committee of Five on Statistics collected data for the computation of accident premiums. Using the Ordinary classification the results gave a pure premium of \$.00116 for each \$1.00 of accidental death benefits and of \$.2370 for each \$1.00 of weekly indemnity with coverage beginning from the first day of disability and with fifty-two weeks' maximum claim. This, therefore, would give a rate of \$.0547 for each \$1.00 per month.

For the health weekly indemnity the report of this same Committee to the Bureau covering the combined health experience for the years 1921 to 1923 inclusive is used. The policy form 02 providing fifty-two weeks' limit with full indemnity for total disability irrespective of house confinement shows a premium of \$.70 for each \$1.00 of weekly indemnity or \$.1615 for each \$1.00 of monthly income.

From the above we obtain an annual combined accident and health premium of \$.2162 for a monthly indemnity of \$1.00 with fifty-two weeks' limit or a monthly premium of \$.0180. The monthly premium for accident principal sum coverage of \$1.00 is \$.0001.

Taking as a unit a monthly income of \$1.00, it will be noted that the last month, the last two months, etc., of any term are exactly equivalent to the corresponding periods of any other term. Therefore, by computing the premiums separately for the first month of each term where the terms run from one month up, the premium for any period desired may be obtained by summation.

While the calculation of any premium on a theoretically correct basis will involve a discount of the expected payments from the date payment is to be made to the date the premium is to be collected, the nature of the data did not seem to warrant such a

refinement. The amount of this discount would be appreciable in the case of an eleven year term but as such a policy is approaching a non-cancellable accident and health policy care must be exercised not to adopt premiums that may prove to be inadequate. Consequently, the effect of interest has been disregarded except in the calculation of single premiums for terms over two years.

When interest is disregarded the premium for any term is the same proportion of a year's premium as the actual days disability expected from the given term is to the total provided by the full year's premium.

In Table I, which is taken from the report of the Committee of Five referred to above, the percentage of liability due to the first day, the first two days, the first three days, etc., is shown. This table is used for both accident and health.

As an illustration of the meaning of this table, it will be noted that opposite 7 days 31.48 % is shown. This means that if the disability benefits were restricted to a maximum of one week instead of 52 weeks the pure premium required for such a policy would be 31.48% of the amount required for the 52 weeks' limit policy.

TABLE I

Number of Days	Percentage of Total Year's Claims Included in Number of Days Shown	Number of Days	Percentage of Total Year's Claims Included in Number of Days Shown
1	4.88%	16	53.14%
2	9.72	17	54.65
3	14.47	18	56.06
4	19.05	19	57.40
5	23.41	20	58.69
6	27.55	21	59.94
7	31.48	22	61.01
8	34.77	23	62.04
9	37.80	24	63.03
10	40.61	25	63.98
11	43.14	26	64.90
12	45.49	27	65.79
13	47.70	28	66.65
14	49.81	29	67.39
15	51.53	30	68.11

The pure disability premium for a one month term would, therefore, be obtained by multiplying the monthly premium for a 52 weeks' limit policy by the average of the percentages in Table I. This average is found to be 46.81%.

By a similar method we construct Table II showing the percentage of claims of 52 weeks' limit which were actually incurred within the number of months indicated, no claim being carried beyond the end of the term.

TABLE II
PERCENTAGE OF 52 WEEKS' COVERAGE INCURRED WITHIN
TERM UNDER CLAIMS INCURRED DURING FIRST MONTH
OF TERM

Term in Months	Average Percentage
1	46.81%
2	76.11
3	84.50
4	88.64
5	91.31
6	93.26
7	94.81
8	96.08
9	97.14
10	98.07
11	98.91
12	99.67

In developing the rates for terms of more than twelve months it is necessary to find a measure for the claims that may be expected to extend beyond 52 weeks. For the purpose of projecting these claims we have used Table VIII in Mr. Cammack's paper entitled "Premiums and Reserves for Non-Cancellable Accident and Health Policies" (PROCEEDINGS, Vol. VII, Page 298) using age 40 as an average age.

In using this table the ratios of claims lasting 2, 3, etc., years to those lasting at least one year were obtained, these ratios being shown in Col. 2 of Table III below.

As the experience which we have been using shows 273 claims disabled for a full year the ratios obtained as above are applied to this number in order to get the number of claims that may be expected to last for the term of years indicated. These results are shown in Col. 3 of Table III.

TABLE III

Disabilities Lasting More Than One Year		
(1) Term in Years	(2) Percentage of One Year Claims Running for Term	(3) Number of Claims $273 \times \text{Col. (2)}$
1	100 %	273.
2	48.3	131.9
3	39.8	108.7
4	33.9	92.5
5	29.8	81.4
6	27.7	75.5
7	25.0	68.3
8	22.9	62.5
9	21.2	57.9
10	19.1	52.1
11	16.6	45.3

It was felt that single premiums should be prepared for each term of months from 1 to 24 inclusive. In order to do this it is necessary to further analyze the claims in Table III according to their duration by individual months. To do this the claims for one year and two years were interpolated using constant first differences. If the basic data were known to be accurate no doubt a better method for obtaining the values at intervening months would be either to plot the known values on graphic paper interpolating directly from the graph for the intervening values or to develop a frequency curve that would yield the number of claims direct by the substitution of the term. Using constant first differences as indicated above the number of claims by successive months are found as shown in Table IV below.

TABLE IV

Period of Dis. Term in Months	No. of Claims	Period of Dis. Term in Months	No. of Claims
12	273	19	190.7
13	261.2	20	178.9
14	249.5	21	167.2
15	237.7	22	155.4
16	226.0	23	143.7
17	214.2	24	131.9
18	202.5		

To obtain the multiplying factor for terms from 12 to 24 months let us consider a term of T months where T is some number between 12 and 24. The premium for the first month of this term will be considered in three separate parts: First, the amount of

claim that can be incurred in a month and last for one year or less; Second, the amount of claim that can be more than one year in duration but not more than $(T-1)$ months; Third, the amount of claim that can be experienced in the final or T th month of the term.

As the basic data furnishes a measure of the first part it remains only to find the ratio by which the last two parts increase the coverage of one year's limit.

The number of days claims due to the second part will obviously be found from the following formula:

$$\frac{\text{No. claims duration 12 months} + \text{No. claims duration } (T-1) \text{ months}}{2} \left[(T-1) - 12 \right] \frac{365}{12}$$

The number of days due to the third part is found approximately by the formula

$$\left[\frac{\text{No. claims duration } (T-1)}{3} + \frac{\text{No. claims duration } T}{6} \right] \frac{365}{12}$$

If it be assumed that the duration of claims is a continuous function varying by moments of time rather than by a unit of one day the application of integral calculus will show the above formula to be exact. When the three results are combined and the ratio taken to the number of days disability within one year the result is the factor by which the premium for one year's limit must be multiplied. These results are shown in Col. 2 of Table V for terms from 13 to 24 months.

LOADING

In computing these premiums it has been assumed that the cost of Acquisition would be 15% and that other expenses, H. O. Administration, Taxes and Claim Expense would total 23½% giving a total loading of 38½% of the gross premium.

Without doubt, the cost of handling business covering short terms only with the resulting small premiums is proportionately much greater than that of handling business of longer terms and higher premiums. Accordingly I have added in an arbitrary flat amount of 50c. for each \$100 of monthly income or ½c. for each \$1.00 of monthly income.

The Committee of Five in their rates made some allowance for this extra expense on claims of shorter term by assuming that a claim incurred any time during a month could continue for the same length of time as if incurred on the first day of that month.

By taking the Ordinary classification for the accident benefits allowance is made for the impossibility of selecting the risks individually. In the case of health weekly indemnity, however, the data is based on all risks combined and it would seem that some little margin should probably be allowed for adverse experience. Accordingly an additional loading factor of 5% of the gross premium has been inserted. This, therefore, gives a total adjusting factor of 43.5%.

The calculation of the premiums on this basis is shown in Table V.

Column III of Table V is found by deducting from Column II the percentage of one year's claims included within the first fourteen days. In a term of one month, because of the short length of time that any claim may run which has been incurred in the last half of the month this amount is only 40.90%. After the first month the amount is 49.81%.

It will be noted that the rates are slightly higher than those prepared by the Committee of Five. This is because the margin for the flat expense allowed in these calculations is somewhat greater than that allowed by the Committee.

The adjustment for the retroactive feature is made as follows: In the report of the Committee 60,478 claims have been analyzed according to duration. The total days disability suffered under these claims during the year was 1,239,333.

Of the 60,478 claims 4,798 lasted exactly fourteen days and 21,332 lasted for a period of 15 days or longer. If we made an adjustment for those claims only which lasted 15 days or longer this would add 298,648 days which is 24.1% of a full year's claims. This would call for an increase in the premium of \$.0521. Without doubt, however, many claimants who return to work at the end of 14 days or even less would be inclined to present claim for at least 15 days if that meant that they would get 15 days' coverage while if they returned to work at the end of 14 days they would get nothing. This would be especially true in many cases where the recovery of the claimant is so gradual that a day or so more or less could not be considered as fraudulent. It is,

TABLE V
CALCULATION OF PREMIUMS ON ACCIDENT AND HEALTH DEFERRED PAYMENT PROTECTION BY
INDIVIDUAL MONTHS OF EXPOSURE BASED ON INDEMNITY OF \$1.00 PER MONTH

Non-Retroactive

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Term in Mos.	% of 1st Yrs. Claims from 1st day within term	Adj. for 2 weeks out	Single Dis. Prem. for 1st month of term: Col. (3) by .0180	Acc. Death Prem. for 1st month of term	Total Single Prem. for 1st month of term: Col. (4) plus Col. (5)	Col. (6) adjusted for flat expense of \$.0050	Gross Single Prem. for 1st mo. of term Col. (7) .565	Gross Rate: Sum of Col. (8)	Comm. of Five Rates
1	46.81	5.91	.0011	.0001	.0012	.0062	.0110	.0110	.0060
2	76.11	26.30	.0047	.0002	.0049	.0049	.0087	.0197	.0165
3	84.50	34.69	.0062	.0003	.0065	.0065	.0115	.0312	.0288
4	88.64	38.83	.0070	.0004	.0074	.0074	.0131	.0443	.0425
5	91.31	41.50	.0075	.0005	.0080	.0080	.0142	.0585	.0570
6	93.26	43.45	.0078	.0006	.0084	.0084	.0149	.0734	.0722
7	94.81	45.00	.0081	.0007	.0088	.0088	.0156	.0890	.0880
8	96.08	46.27	.0083	.0008	.0091	.0091	.0161	.1051	.1042
9	97.14	47.33	.0085	.0009	.0094	.0094	.0166	.1217	.1211
10	98.07	48.26	.0087	.0010	.0097	.0097	.0172	.1389	.1384
11	98.91	49.10	.0088	.0011	.0099	.0099	.0175	.1564	.1561
12	99.67	49.86	.0090	.0012	.0102	.0102	.0181	.1745	.1742
13	100.33	50.52	.0091	.0013	.0104	.0104	.0184	.1929	.1926
14	100.97	51.16	.0092	.0014	.0106	.0106	.0188	.2117	.2113
15	101.58	51.77	.0093	.0015	.0108	.0108	.0191	.2308	.2304
16	102.17	52.36	.0094	.0016	.0110	.0110	.0195	.2503	.2499
17	102.72	52.91	.0095	.0017	.0112	.0112	.0198	.2701	.2697
18	103.25	53.44	.0096	.0018	.0114	.0114	.0202	.2903	.2899
19	103.74	53.93	.0097	.0019	.0116	.0116	.0205	.3108	.3104
20	104.21	54.40	.0098	.0020	.0118	.0118	.0209	.3317	.3313
21	104.65	54.84	.0099	.0021	.0120	.0120	.0212	.3529	.3526
22	105.06	55.25	.0099	.0022	.0121	.0121	.0214	.3743	.3740
23	105.44	55.63	.0100	.0023	.0123	.0123	.0218	.3961	.3957
24	105.79	55.98	.0101	.0024	.0125	.0125	.0221	.4182	.4179

of course, impossible to say to what extent the claims would be increased by this adverse selection. If all claims that lasted 14 days were extended to 15 this would further increase the claims by 71,970 days which would call for a pure premium of \$.0126. No doubt, this would be too great an adjustment. If then we arbitrarily take \$.0075 the results would probably be reasonably close. This will give a total adjustment of premium of \$.0596 which is an increase on the monthly basis of \$.0050.

Since any claim incurred during the last 14 days of the last month of any term would receive no indemnity under the non-retroactive basis and under the retroactive would receive indemnity for not more than the number of days from date of disability to the end of the term only, provided disability lasted for at least 15 days the adjustment to be added for the last month of the term is \$.0035 instead of \$.0050.

The rates on the retroactive basis are constructed as shown in Table VI.

While the resulting rates are greater for all terms than those produced by the Committee, they are in nearly every instance less than 1% greater.

For terms over two years both single and annual premiums are calculated. As a claim incurred in the first year has the possibility of involving one year's payments more than a claim incurred in the second year it follows that the annual premiums are of a decreasing nature. It would be possible to compute level annual premiums but this would either involve negative reserves or a policy so drawn as to limit the liability in the earlier years to an amount not greater than the average liability for each year. Such a procedure would appear to involve more complications than the use of decreasing annual premiums.

In the following table interest is disregarded in the calculation of annual premiums but the single premiums are obtained by discounting the annual premiums with interest at 4% per annum. The factors in Column 2 are found in the same general way as those in Column 2 of Table V.

In Tables VII and VIII the annual premiums are given in the reverse order in which they are paid. That is, the first premium is paid when the remaining term is one year, the second premium when the remaining term is two years, etc.

TABLE VI
CALCULATION OF PREMIUMS ON ACCIDENT AND HEALTH DEFERRED PAYMENT PROTECTION
BY INDIVIDUAL MONTHS OF EXPOSURE BASED ON INDEMNITY OF \$1.00 PER MONTH
Retroactive

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Term in Mos.	Single Pure Prem. for 1st Mo. of Term Non- Retroactive Table V Col. (6)	Adjust. for Retroactive	Col. (2) + Col. (3)	Col. (4) ad- justed for flat exp. of \$.0050	Gross Single Prem. for 1st Mos. of Terms Col. (5) .565	Gross Rates sum of Col. (6)	Comm. of Five Rates
1	.0012	.0035	.0047	.0097	.0172	.0172	.0145
2	.0049	.0050	.0099	.0099	.0175	.0347	.0335
3	.0065	.0050	.0115	.0115	.0204	.0551	.0543
4	.0074	.0050	.0124	.0124	.0219	.0770	.0765
5	.0080	.0050	.0130	.0130	.0230	.1000	.0995
6	.0084	.0050	.0134	.0134	.0237	.1237	.1232
7	.0088	.0050	.0138	.0138	.0244	.1481	.1474
8	.0091	.0050	.0141	.0141	.0250	.1731	.1722
9	.0094	.0050	.0144	.0144	.0255	.1986	.1975
10	.0097	.0050	.0147	.0147	.0260	.2246	.2234
11	.0099	.0050	.0149	.0149	.0264	.2510	.2496
12	.0102	.0050	.0152	.0152	.0269	.2779	.2761
13	.0104	.0050	.0154	.0154	.0273	.3052	.3030
14	.0106	.0050	.0156	.0156	.0276	.3328	.3303
15	.0108	.0050	.0158	.0158	.0280	.3608	.3579
16	.0110	.0050	.0160	.0160	.0283	.3891	.3858
17	.0112	.0050	.0162	.0162	.0287	.4178	.4142
18	.0114	.0050	.0164	.0164	.0290	.4468	.4428
19	.0116	.0050	.0166	.0166	.0294	.4762	.4719
20	.0118	.0050	.0168	.0168	.0297	.5059	.5012
21	.0120	.0050	.0170	.0170	.0301	.5360	.5310
22	.0121	.0050	.0171	.0171	.0303	.5663	.5609
23	.0123	.0050	.0173	.0173	.0306	.5969	.5911
24	.0125	.0050	.0175	.0175	.0310	.6279	.6218

TABLE VII
ANNUAL AND SINGLE PREMIUMS BASED ON INDEMNITY OF \$1.00 PER MONTH
Non-Retroactive

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Term in Years	% of 1st yrs. Claims from 1st day within term	Col. (2) less 49.81%	Single Dis. Prem. for 1st Yr. of Term: Col. (3) by .2162	Acc. Death Prem. for 1st yr. of term	Total Single Prem. for 1st yr. of term: Col. (4) plus Col. (5)	Gross Annual Prem. Col. (6) .565	Comm. of Five Rates	Gross Single Prem. Col. (7) Disc. @ 4%	Comm. of Five Rates
1	For calculations see Table V					.1745	.1742	.1745	.1742
2	For calculations see Table V					.2437	.2437	.4115	.4112
3	107.79	57.98	.1254	.0354	.1608	.2846	.2846	.6803	.6800
4	111.03	61.22	.1324	.0493	.1817	.3216	.3216	.9757	.9754
5	113.78	63.97	.1383	.0632	.2015	.3566	.3566	1.2947	1.2944
6	116.20	66.39	.1435	.0771	.2206	.3904	.3904	1.6353	1.6350
7	118.42	68.61	.1483	.0911	.2394	.4237	.4238	1.9960	1.9959
8	120.44	70.63	.1527	.1050	.2577	.4561	.4561	2.3753	2.3752
9	122.29	72.48	.1567	.1189	.2756	.4878	.4877	2.7717	2.7715
10	123.99	74.18	.1604	.1328	.2932	.5189	.5190	3.1839	3.1838
11	125.51	75.70	.1637	.1467	.3104	.5494	.5494	3.6107	3.6106

Both the single and annual premiums are practically identical with those of the Committee of Five.

In Col. 9 of Table V and Col. 7 of Table VI it will be noted that the gross adjustment for making the rates retroactive for a term of one year is \$.1034, while for the first year of a two year term it is \$.1063. As the adjustment of any term of two years or more would be the same as the adjustment for the first year of the two year term the annual premiums on the retroactive basis are formed from Table VII by adding \$.1034 to the premium for the term of one year and \$.1063 to the annual premium for each term of more than one year.

The single premiums are formed by discounting the annual premiums in the same manner as given in Table VII.

In Table VIII the premiums produced are slightly greater than those of the Committee of Five. This difference is due to the fact that in the arbitrary adjustment used for the retroactive feature a slightly greater amount was used than was the case in the Committee of Five rates. No claim is made, therefore, that the rates of the Committee should be increased.

The annual premiums shown in Table VII and VIII make no provision for the waiver of any premiums falling due following disability other than the fact that provision is made for disability payments to the end of the term in event the insured remains totally disabled for the full period. If it is considered that any disability extending into the following year should include a provision for the waiver of a proportionate amount of the premium, then the part of the monthly indemnity premium which is being charged for the benefits beyond the end of the year should be increased by approximately the same percentage as the next annual premium bears to the amount of disability income provided for one year. As the creditor is paying the premium to the insurance company there is probably very little reason for the inclusion of a waiver of premium feature. However, if such premiums are desired, they can readily be computed from the foregoing tables.

RESERVES

The unearned premium reserves carried in connection with commercial accident and health insurance is one-half of the premiums in force. In deferred payment insurance, the maximum

TABLE VIII
ANNUAL AND SINGLE PREMIUMS BASED ON INDEMNITY OF \$1.00 PER MONTH
Retroactive

(1)	(2)	(3)	(4)	(5)	(6)
Term in Years	Gross Ann. Prem. Non-Retroactive	Gross Ann. Prem.	Comm. of Five Rates	Gross Single Prem. Col. (3) disc. @4%	Comm. of Five Rates
1	.1745	.2779	.2754	.2779	.2754
2	.2437	.3500	.3449	.6172	.6097
3	.2846	.3909	.3859	.9843	.9721
4	.3216	.4279	.4228	1.3743	1.3575
5	.3566	.4629	.4579	1.7843	1.7631
6	.3904	.4967	.4917	2.2123	2.1952
7	.4237	.5300	.5249	2.6571	2.6356
8	.4561	.5624	.5574	3.1172	3.0915
9	.4878	.5941	.5890	3.5913	3.5615
10	.5189	.6252	.6202	4.0782	4.0446
11	.5494	.6557	.6506	4.5769	4.5395

liability is of a decreasing nature. Consequently, the unearned premium at the middle of the term is less than one-half of the full premium. In the case of annual premiums or of single premiums for terms of less than one year, a valuation on the basis of one-half of the premiums in force at the end of the year would be very conservative, provided the business were evenly distributed throughout the year. When the commodity involved is one of a seasonal nature the business is not likely to be evenly distributed.

For reserves in connection with single premiums the business should be grouped according to the unexpired term. The full single premiums for such unexpired terms would produce the proper reserves.

Too much detail in connection with any phase of this business would require a greater margin for expenses than has been allowed in the calculation of the premiums.

Loss reserves would seem to involve the same general principles as regular accident and health policies.

When the Committee of Five on Statistics originally produced its premiums, no thought had been given to the matter of presenting the rates before this Society. Consequently, many of the theoretical factors that could have but little bearing on the rates were disregarded. A more theoretical study would seem to justify the action of the Committee in this regard.

It should not be assumed that the rates here produced would be sufficient for all classes of risks and all localities. Without doubt, a decided factor is that of age. If there is any reason to think that many of the risks to be covered are above 45 or 50, no doubt a further allowance should be made for this.

So also in cases where a substantial percentage of the risks are women, or are of an industrial grade, or where the commodity handled is sold largely to farmers, there might be a question of the adequacy of the rates. Many other questions will arise which must be considered by the underwriter.

In concluding this paper which is based so largely on the report of the Committee of Five, I wish to record the fact that their report was produced by the complete co-operation of the full Committee.

PAYROLL AUDITING

BY

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INSURANCE COMPANY

Payroll auditing by salaried employees was inaugurated about twenty-five years ago and was not accepted without protest from both policyholders and agents. In some instances the auditor was looked upon with suspicion until it was evident the premium would not be inflated by inclusion of payrolls to which we were not lawfully entitled. Time passed, and where the auditor was once coolly tolerated he is generally welcomed today. This change of attitude is the result of wholesome respect and admiration for the auditor's knowledge of the coverage each policy affords, and his familiarity with bureau and manual rules which permits the correct classifying of whatever operations may be undertaken.

Auditing is the examination and authentication of accounts so necessarily the work can only be intrusted to experienced accountants if justice is to be done both insurer and insured. Therefore, only experienced accountants are employed who undergo an intensive insurance course in our training school, where a study is made of the various insurance contracts, manual rules, classifications and their interpretation. After leaving the school, further training of a practical nature is received by accompanying a veteran payroll auditor until such time as is possible to intelligently and correctly adjust the premium of the average risk without danger of either undercharge or overcharge.

It is not expected that anyone can be acquainted with the many operations in every line of business, resulting in a few of our auditors specializing. This is particularly true in the larger cities where these specialists devote their entire time to certain industries, such as stevedoring, vessel and maritime work; the building trades; subway construction; and certain complicated manufacturing risks.

The training of men is of the utmost and vital importance to your work, and, while it is said that "figures cannot lie", rates

*This paper presented by invitation of the Committee on Program.

surely may become distorted and not reflect the proper exposure if payrolls are not properly segregated and classified.

The importance of payroll auditing is being recognized more and more each year. The responsibilities greatly increase. Judgment and initiative are important factors, but there are certain fundamentals adhered to which assist us to establish the total amount of premium earned.

We insist upon verification of wage expenditure shown in all books of original entry whenever supporting records are maintained. It is essential to every business that some sort of a record be kept disclosing the amount of wages paid, not solely for insurance purposes, but primarily for the benefit of the owner or owners. The majority of concerns also have records such as check stubs, canceled checks, cash book, ledger, a copy of their income tax report or other special records which fit the needs of their particular type of work or business.

The average mercantile or manufacturing adjustment results in few complications as the records are usually satisfactory and it is infrequent when such risks have numerous operating classifications to cause concern in the distribution of payrolls.

Contracting risks present more problems than all the other groups combined, and I refer particularly to the general contractor engaged in construction operations. Fortunately the larger ones through necessity must keep an elaborate set of records which not only show the amount of payroll expended but also disclose the wage cost for the various operations and jobs undertaken. Furthermore, documentary proof, such as contracts with those for whom the work is performed, is generally available, which permits checking to determine if all payrolls were obtained and properly classified.

Of course, there are many risks that have no records of any description, especially where the business is owned and operated by an individual. Partnerships and corporations are not exceptions but generally they maintain some record, as an accounting is expected when more than one person has money invested in an enterprise. There is little to worry about if the nature of the business is either mercantile or manufacturing, as ordinarily the payroll will not fluctuate to any great extent and it is simple to count the employees and determine their remuneration. With contractors the situation becomes more complicated and many

times the premium adjustment is anything but satisfactory. Inspection reports and claim files play an important part in such cases. If it is possible to make an estimate of the payroll expenditure of the completed work, an inspection is made for that purpose for comparison with the verbal statement of payrolls given.

The information and data obtained by our Inspection and Engineering Division is of much value to our work. That division furnishes the auditors with copies of inspection reports of all contracting risks which indicate the locations or addresses of work under construction, the number of employees engaged on each project and the operations to which they are assigned. Copies of schedule rating reports are carefully reviewed at time of audit, which greatly eliminates the possibility of misclassification or failure to overlook payroll of certain departments or subdivisions. We are constantly being furnished with information by our inspectors to be on the alert for certain payrolls, which has resulted in the collection of considerable premium which might otherwise have been missed.

Our Claim Division furnishes us with a copy of each accident report which gives the injured's name; when, how and where the accident occurred, and any other facts that are of interest. Whenever an accident is assigned to a classification which is not shown in the policy, we are immediately advised by separate memorandum and results many times in a tentative audit to determine the volume of payroll being expended for that classification. We are also informed of any accidents suffered by sub-contractors' employees and in such cases we likewise make tentative audits to satisfy ourselves these payrolls will be available for premium charge at expiration of policy.

Our credit unit also plays an important part in assisting us to salvage considerable premium which otherwise might be lost. We are informed of risks that are not healthy financially, and here too a tentative audit is made to learn if the advance premium is adequate. These risks are audited as soon after expiration as possible to facilitate premium collection. These special credit reports disclose the annual volume of business, so by analyzing them it is possible to gauge the adequacy of the payrolls obtained at time of audit.

Intelligent and sympathetic underwriting saves our division

many dollars and conserves much of the auditors' time. For example, if an address of a risk is incorrect, a fruitless call is made, resulting in waste time—and waste time means waste dollars. If the operations are incorrectly classified, the burden falls on the auditor to properly classify the risk, which also takes time, and if the rates to be used are greater than those shown in the policy, dissatisfaction arises and frequently results in loss of profitable business, but such occurrences must be expected as the average agent who submits an application is not an underwriter. If the locations for which insurance is provided are not fully disclosed, there is a possibility of overlooking payroll and that means loss of premium. While we benefit greatly from the cooperation rendered by the Underwriting Division, they too profit by information gleaned by the auditors. Whenever a renewal policy is issued, the underwriter reviews the previous premium adjustment report to determine the active classifications and the earned premium, a similar amount which ordinarily can be used as the advance premium for the renewal policy. When it is learned at time of audit that a change of ownership has occurred, the underwriters are automatically advised so current insurance may be endorsed. The same procedure applies when additional classifications or a change in classification results from the facts obtained at time of adjustment. If the earned premium developed is considerably in excess of the advance, this information also is relayed to the Underwriting Division, which results in an increase in the advance premium under the current policy. The Service Divisions are believers in disseminating all information that may help another, and by closest cooperation many thousands of dollars of premium have been collected without strenuous effort.

Experience has taught us that certain lines of business should not be insured until an audit investigation is made to determine if satisfactory records are kept which will assure us of receiving all premium to which we may be entitled. Several hundred such audit investigations are made each year and result in the company rejecting many applications as undesirable business.

There are several inspector-auditors assigned to the New York City payroll audit unit whose duties are to observe new buildings under construction and report the names of all contractors working on such buildings when insured by us. They also make

estimates of work undertaken by those who have not kept a record of payroll expenditure, and investigate policyholders who we believe are manipulating payrolls to defraud us of premium.

It is not infrequent to find a policyholder who is dishonest, and unfortunately some are inclined to distort facts so the auditors will apply certain payrolls to lower-rated classifications, which rate these payrolls are not privileged to enjoy. It is almost an every-day occurrence for an auditor to be offered a bribe to fix his report so that it will greatly reduce, if not entirely wipe out, the additional premium. An hour would not be sufficient time to acquaint you with the methods pursued to defraud us of premium—however, the most frequently used methods are to maintain more than one set of books or manipulate one set by making false entries to confuse the auditor. It is not unusual to find a risk where three sets of books are kept, one for insurance companies, another for the government and a third for the assureds themselves. The keeping of fraudulent records is not prevalent in any particular line of business, as someone in practically every line of endeavor has been caught at one time or another withholding his true payroll expenditure. Many give us the excuse that it is necessary to meet competition; others offer no reason, as their reputation is not worth the few dollars they expect to gain. After being caught, some break down and weep while others are as indifferent as a frog on a rainy night.

For the preceding nine months of this year, we have unearthed about 150 policyholders who attempted to defraud us of approximately \$150,000 in premium, an average of \$1,000 per risk. It would appear from these figures that only the larger risk is engaged in this nefarious work, which is not the fact, as many of the 150 cases were of the small risk or small premium type, which has taught us to be as painstaking in auditing a small risk as a large one, and frequently what appears to be a small risk develops into one of fairly good size by reason of audit. Small risks can be divided into two classes—first, those with an advance premium in excess of the minimum premium, which we audit each year even though the risk has been carried for many years. The second class are those whose advance premium is the same as the minimum premium and, if this group discloses any construction or manufacturing classifications, we always make an audit each

year. Store risks are treated as follows: An audit is always made at expiration of the first year's policy and, if the actual earned premium is less than the minimum premium, we may forego subsequent audits, but before definitely passing a risk for any year of its cover without an audit, all home office records are scrutinized and the auditor is given a list of such cases with instructions to check our decision by reviewing the branch office proposal, as such review will give him an opportunity to observe coverage, premium involved and location of risk, and, if there are any cases where in his opinion an adjustment should be made, he proceeds to do so. When in doubt as to the advisability of audit, the case is discussed with the agent or broker, thereby using every precaution to avoid passing as "no adjustment" any case which would deprive the company of additional premium.

Ordinarily, the auditor is the last man to call on the policyholder, and the information he obtains regarding the risk is very valuable. A properly trained auditor can assume a great deal of responsibility and, if you are not permitting your auditors to assume the responsibility which is rightfully theirs, you are smothering the initiative of a very important service division of your organization.

HAS THE INDUSTRIAL ACCIDENT RATE DECLINED SINCE 1913?

BY

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The condition and form of our federal and state accident statistics do not permit the formulation of a satisfactory answer to this question. As United States Commissioner Ethelbert Stewart has continually pointed out, adequate machinery for the collection of industrial accident statistics simply does not exist—it is as though we were so little interested in these deaths and injuries that we did not care even to count them!

In the absence of dependable statistical information, we are compelled to fall back upon generalization, deduction and surmise—methods too loose to satisfy the actuarial mind. What follows, therefore, is submitted to you with considerable mental reservation. It constitutes, however, the best answer I can make to the difficult question that has been propounded.

Let us clear the way by disposing of an impression which seems to be rather prevalent in extra-insurance circles: that, by virtue of the compensation laws, either those who enforce them or those who make the compensation insurance rates must have accumulated statistical information which could be made to show the trend of industrial accidents. The negation of this is a simple matter. There are supposed to be annually from 18,000 to 25,000 fatal industrial accidents in the United States, and about 130 times as many non-fatal "lost-time injuries."† Under the compensation laws there were reported in 1925 to 43 state authorities and one federal authority‡ only about 11,000 accidental deaths and 1,700,000 non-fatal injuries. The remaining deaths and injuries, presumably 40-60% of the total, were not reported because they did not fall within the scope of any compensation law. As this latter group is heavily weighted with accidents incurred in special employments and in extremely small establishments, the reported cases are probably not a representative

*This paper presented by invitation of the Committee on Program.

†Injuries entailing loss of working time other than the balance of day or shift on which injury was incurred.

‡U. S. Compensation Commission.

cross-section but a selection. Because the application of compensation enactment operates to lessen accident occurrence, the selection is favorable; that is, probably better than average.

So much for state statistics; in the insurance field we have a further selection of the compensable group in which cases coming under self-insurance are excluded. This is a selection of a selection, and we cannot assume that it is representative of the entire industrial situation; probably it is not. As there were reported for all states in policy-year 1925 only 4027 fatal cases and 367,998 non-fatal cases (Schedule Z), we have here only 16-22% of the whole story, and we cannot tell which part of it it is. It may be either a favorable or an adverse selection.

In this paper I propose to attack the problem from the opposite side. Let us consider first those parts of the Mortality Statistics of the Bureau of the Census which deal with accidental deaths; that is, deaths from external causes excluding homicides and suicides. You are aware that the health departments, medical examiners, etc., of the states report to the Bureau of the Census on blanks which permit classification of causes of death in accordance with an internationally accepted list. This list appears to have been compiled originally with the medical viewpoint predominating, and, although slight improvements have been made from time to time in the matter of accidental death causes, it is still very inadequate and confused. It is a mixture of general accident causes (*e. g.*, "traumatism by fall"), accident causes special to industrial exposures (*e. g.*, "traumatism in mines"), and broad physiological terms which may be neither accident causes nor even the proximate causes of death (*e. g.*, "fractures"). Another inconsistency is introduced by the method of classifying deaths from accidents involving two classes of vehicles under the caption relating to the heavier vehicle. Thus, deaths from automobile and railroad train collision are classified as railroad accidents rather than automobile accidents.

The above relates to the sub-classifications. So far as the total of reported accidental deaths is concerned, admitting that it includes some homicide cases, probably lacks a considerable number of cases where accidental injury predisposed the victim to a disease of which he later died, and includes a considerable number of suicides which kindly disposed medical examiners and coroners have permitted to pass as accidents, I believe that it

still gives a fair picture of what is taking place in the registration area, and that its accuracy changes little from year to year.

The mortality rate derived from these reported deaths must be taken with more reservation. It is based upon the population by census or as estimated for non-census years. This is a satisfactory basis for mortality rates on causes of accidental death which are general and conceivably affect all classes, sexes and ages alike, but it is less satisfactory where the exposure to accident is special and limited. For example, few persons other than miners are likely to suffer traumatism in mines. We can go further and say that the very large, important and impressive sub-classification of automobile accidents can be conceived really to consist of three parts—accidents to the public, to passengers and to drivers. In the first two, we can conceive that all classes and ages of citizens are exposed to the hazard, and indeed one-third of the victims are children. In the case of drivers, however, the exposure is almost exclusively to adults, and a rate based upon the total population is therefore misleading and not comparable with the balance of the automobile accident mortality rate. As the number of deaths from automobiles is rapidly increasing and already represents almost one-quarter of the total accidental deaths, this matter is of some importance.

Bearing in mind these natural inaccuracies in the total rate as computed, let us examine its course rather than its value. It is shown in Fig. I together with three straight-line trends by the method of least squares. The trend which is marked *A* is for the entire 25-year period. Its equation is:

$$y = 86.324 - .522 x$$

Its standard deviation is ± 5.16 , the standard error of estimate is ± 3.53 , and correlation between x and y is $-.730$. This seems to establish the existence of definite downward trend in the rate during the past quarter-century. The decrement has a present value of about 500 fewer deaths a year. If continued, the millennium of no accidental deaths would take place in A. D. 2065—but this is absurd since the rate does not and never will follow a straight line!

Line B has been computed for the period 1900 to 1912, and Line C for the period 1912 to 1924. Their respective equations are:

$$(B) \ y = 84.501 - .236 x$$

$$(C) \ y = 94.748 - .974 x$$

This suggests that, notwithstanding the advent of the war, the decline has been more rapid during the later period and has a present average value above 1,000 lives a year. This, you will admit, is encouraging.

I desire to call particular attention to the behavior of the rate itself from 1913 on. Here commenced a rapid decline which was sharply reversed in 1915 on our participation in the war, but this decline was resumed in 1919 and continued through 1921. This is indicated in the diagram by the dotted line paralleling the trend C. In 1921-22 there was a violent reversal. In the whole 25-year period we have six sharp reversals of the curve, the three most significant being reversals from downward to upward trend in 1908-09, 1915-16 and 1921-22, the indication of reversal in each case being sustained by at least four years' experience.

Here seems to be something quite remarkable—the ability of the accident rate of one hundred million people suddenly to reverse itself. For such a large group, one would expect a fairly smooth curve in view of the wide variety in the nature and causes of accidents—such a curve, for example, as presented by some of the disease death-rates. Since changes in population occur too gradually to account for it, it must be due to abrupt change in the number of accidental deaths.

With this thought in mind, let us examine some of the principal components of the total number of deaths. To simplify the process, certain of the so-called causes have been grouped: "burns" includes "conflagrations"; all forms of poisoning are grouped with suffocation and gassing; traumatism in mines and quarries are combined; "other transportation" includes street-cars, airplanes, balloons and "other vehicles"; "fractures" is combined with "traumatism by cutting and piercing instruments" and with "landslide, other crushing." In "electricity", however, lightning is excluded. Under this grouping the number of deaths for age groups 20-64 appears in Fig. II as index numbers commencing at the year 1918. This selection of age groups was made to dispose of distortions due to the inclusion of the young and those of advanced age. The relative importance of each component for the year 1924 is indicated by percentage figures at the right. Furthermore, all curves have been grouped in the diagram according to their general form and behavior. These groups are lettered, A, B and C.

In the five curves of Group A we note marked and evidently associated reversals in 1921-22. In the three curves of Group B, there are less marked indications of this. In Group C the reversal is apparently absent. Groups A and B with an aggregate importance of 44.9% (in 1924) include practically all major causes having strong industrial significance. The behavior of these eight curves is strikingly similar and leads at once to the deduction that in 1921-22 there was at work some dominant factor affecting the accident possibilities of the entire adult population and itself capable of sudden reversal.

What factors or influences of this sort exist in life and sway the destinies of thousands of people? We may at once eliminate from consideration those incapable of sudden change. These include the influence of education, of which the safety movement is a part, and of scientific development, of which the safety movement is again a part, and the mechanization of industry and of life in general is also a part. These are dominant forces and doubtless have much to do with the gradual downward trend of the accident rate shown in Fig. I, but they are incapable of creating abrupt major changes.

Climatic changes are abrupt and do exert an effect on certain classes of accidents—notably drownings. War has a major and sudden effect on life and is capable of doing exactly what is shown in Fig. I; in fact, the earlier parts of the curves in Fig. II represent the post-war return to normal conditions. Fashions are capable of sudden change and have a surprisingly far-reaching effect on many of our undertakings, though hardly upon industry or life as a whole, even though we are rapidly becoming a standardized nation. To none of these influences, however, can we attribute the sudden change in the mortality rate in 1921-22 and, previously, in 1908-10, even though we may cite war as the cause of the reversal in 1915-16. Some of them may have been contributory, but certainly none was dominant.

We discover the dominant factor which is capable of causing abrupt change when we study the statistics of business and employment. If you will refer to the charts of indexes of employment on pages 50 and 55 of "Business Cycles and Employment"*

*Report and Recommendations of a Committee of the President's Conference on Unemployment, McGraw-Hill Book Company, Inc., New York, 1923.

and compare them with Fig. I, you will find that the cycles of the mortality rate correspond closely with the cycles of the adjusted employment index. There has been no opportunity to work out the correlation, in fact, the basic figures used for the employment charts are not included in the text, but I believe a high degree of correlation could be shown.

It is not my intention to assert, however, that employment is the dominant factor which controls the behavior of the accident mortality rate, but the employment cycle follows closely the business cycle and the condition of economic prosperity is, in my opinion, the factor dominating our total accident mortality rate. The low points in the latter do coincide with the low points of industrial employment, but each in turn follows closely a so-called business "panic," "crisis" or "depression" and is but a symptom of a common disorder. We know that the economic prosperity of the country is subject to rapid change, and may be upset in less than a year and the whole nation profoundly affected thereby. William Berridge has said that employment conditions are a connecting link between business and social conditions, and that cycles of suicide, crime, pauperism, marriage and migration follow the fluctuations in the economic prosperity of wage-earners; it would not be strange to find accidental deaths and injuries in the same company†.

It is not difficult to rationalize this thesis which, by the way, is by no means a new thought and has previously been stated before this society. Economic prosperity dominates employment and employment dominates exposure to industrial accidents. There are also indirect effects: when men are laid off, "selective discharge" takes place and accidents decrease; when men are taken on, the hiring is less selective and the new employee is more prone to injury than his fellows—furthermore, under pressure for accelerated production, we are apt to have men and machines taxed to the utmost, much old equipment pressed into service, minimum attention to repairs, and new production methods hastily adopted and put into use without adequate trial. Such conditions inevitably produce more accidents.

Outside the industrial field, I think it can be said with truth that better economic conditions give us more opportunity and

†Since the preparation of this paper it has been possible to compare current income per capita, as reported by the National Bureau of Economic Research, with the accident mortality rate. Fig. VI reveals the presence of a considerable degree of cyclic coincidence.

more incentive to expand our lives, to do more recreation, to travel, to acquire new possessions, to follow new hobbies. The result must be increased exposure outside the confines of the home and exposure to hazards with which we have less contact when life is more a matter of routine. Greater activity and wider activity inevitably bring increased accident exposure.

We may go further and look for evidence of the domination of economic prosperity in the compensation statistics of states and of the insurance carriers. We may trace its effect in the form of the curves in Figs. III†, IV, and V—all of which show evident similarity in form to those of Group A in Fig. II. I think similar effects can be found in the accident experience of practically all large groups.

This completes the generalization. I deduce the theory that the fluctuations or cycles of the general accident mortality rate are the reflection of the cycles of economic prosperity, and I surmise that they will be with us for many years to come—and always to the discomfiture of the makers of casualty insurance rates. I am infinitely more interested in the mortality rate trend. It signifies that in some fields of hazard there has been a change for the better. That change is certainly not taking place on our streets and highways, and I see no reason for believing that the safety movement has penetrated and implanted itself in the home. There is no other place for it but within industry itself and that is where we should expect to find it. The one greatest drag on safety progress is the human obsession to argue about the relative responsibility for an accidental occurrence. If you do not believe me, listen to an argument between two automobile drivers involved jointly in a collision! Out of such argument usually comes nothing of constructive value. In the industrial field this obstruction to progress was effectively removed by the enactment of compensation laws, and forthwith the industrial safety movement gathered headway.

It must be remembered that there is unmistakable proof of very real accident reductions within industry. The entire iron and steel group has reduced accident frequency progressively from 59.2 in 1910-14 to 29.9 in 1922-26 (five-year moving averages) and severity from 4.1 to 2.8. Ninety per cent of the

†Compensable deaths reported by 21 states, all being states which have reported with reasonable regularity in the period 1918-24.

cement industry (Portland Cement Association) from 1920 to 1925 reduced frequency 29% and severity 30%. The American Railway Association reports 22.1% decrease in casualties to employes per million man-hours in 1926 as against 1923. This followed a five-year period in which the fatality rate was the lowest since 1898.

These groups are uniform in their consistency, but we also have two large non-uniform groups. The first comprises member companies of the National Safety Council who have reported consistently for two or more years. The records by trade "sections" show a number of consistent reductions in frequency and severity. For 1925-26, 687 plants of various sorts employing nearly a half-million persons reduced accident frequency 13% and severity 11%.

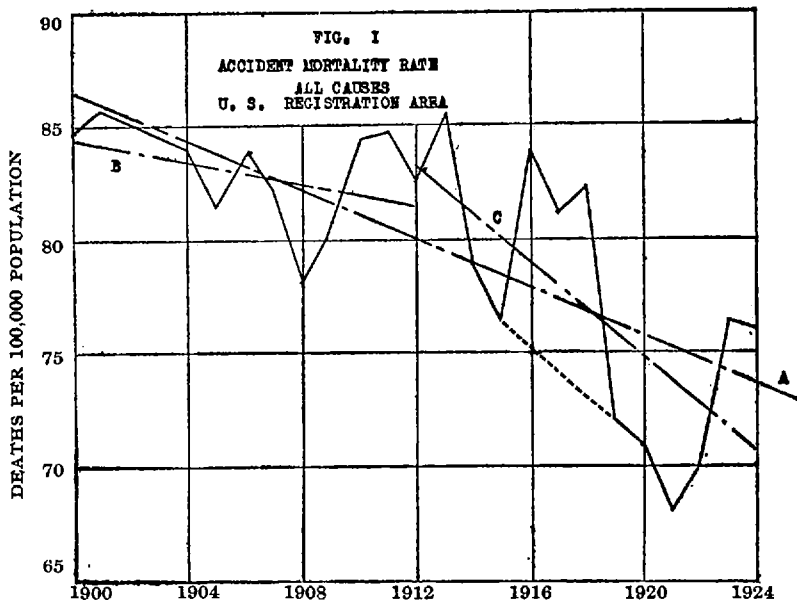
The second group consists of 13,898 companies engaged in twenty major industries and employing 2,454,413 persons. This group supplied information to the Safety and Production Committee of American Engineering Council for the research promoted by the National Bureau of Casualty and Surety Underwriters, the report of which will soon be published. This is a large and heterogeneous group, but in the aggregate it has reduced the frequency of accidents 18.5% between 1922 and 1925. We learn much more, including the facts that a group of 25 chemical plants have made considerable reduction in frequency (and some of them have reduced severity), and that 131 metal working plants, employing 107,588 persons, reduced frequency 11.5% and severity 3.9%.

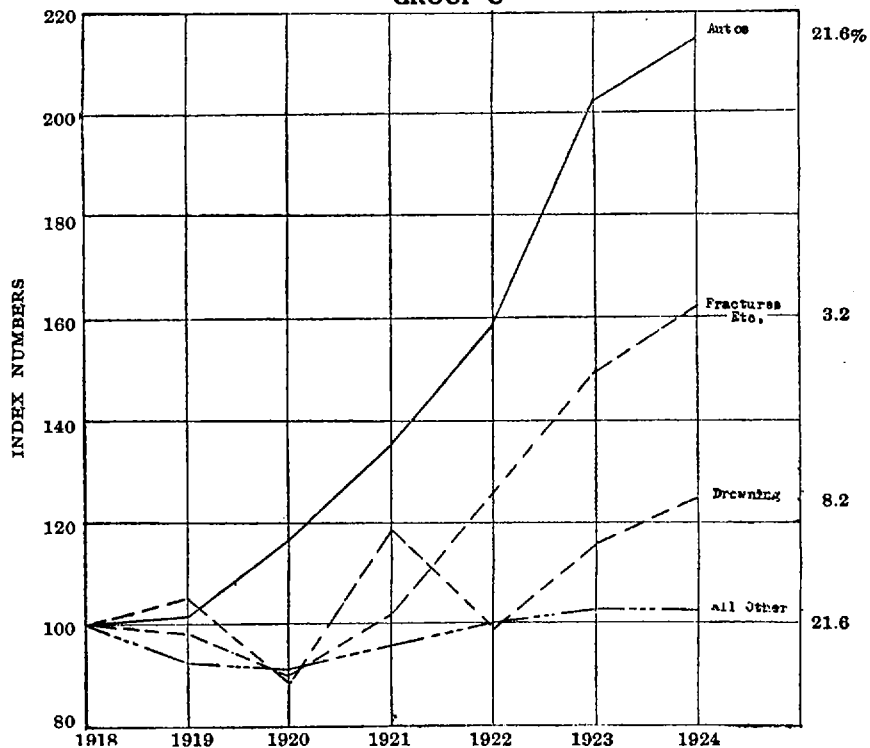
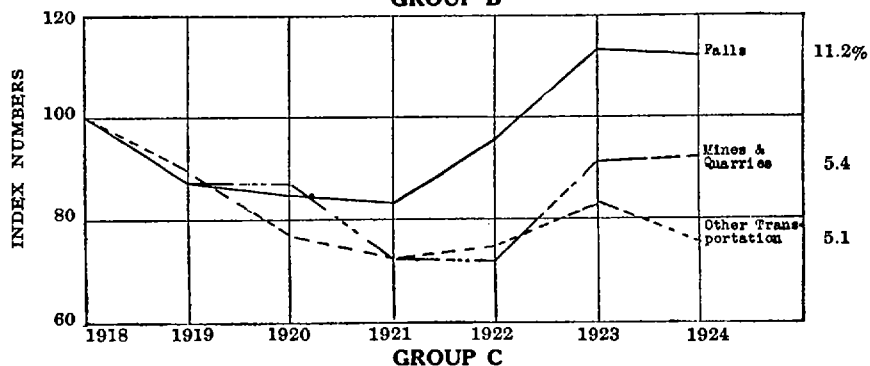
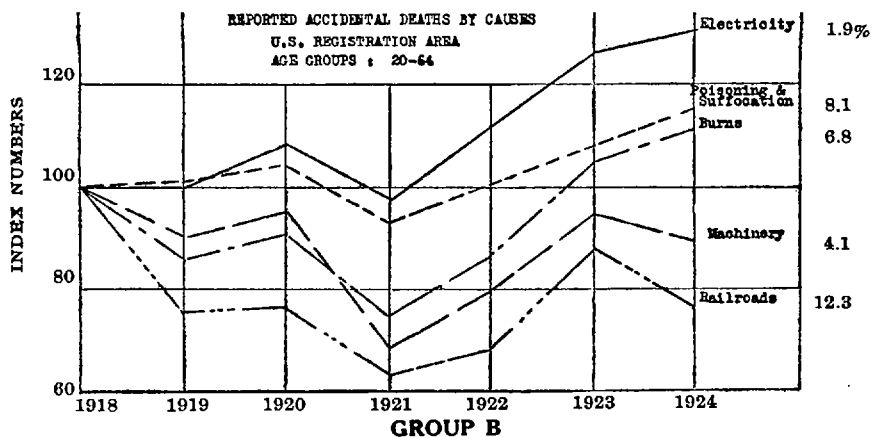
To the above might be added almost endless instances of marked and sometimes remarkable reductions by individual companies or plants, many of which are operated by large corporations. It is here that one finds the brightest side of the industrial picture and comes inevitably to the conclusion that much real progress has been made. But there is also a dark side. The coal mining industry has not had a creditable record, and in the bituminous field the rates are not only high, but are increasing. The records of the woodworking industry, such as they are, offer little encouragement. Some of those of the textile industry are still worse and in single groups increases as great as 300% in four years have been recorded. Aside from this, we know very little of what is going on in very small

industrial establishments of all sorts. The rates may be stationary or they may be increasing. We do know that in 1924-25 in New York State the stock, mutual and state fund experience showed for such risks a loss ratio almost double that of the large risks.

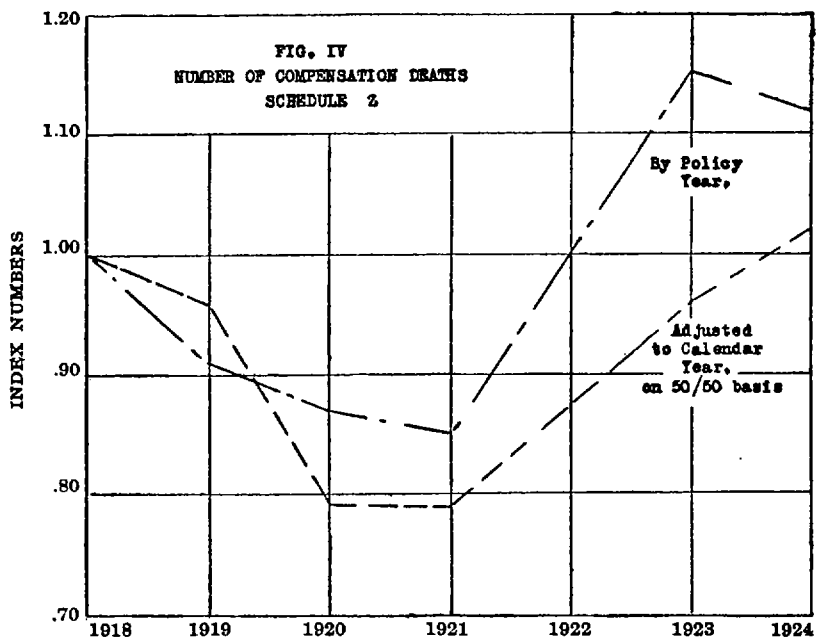
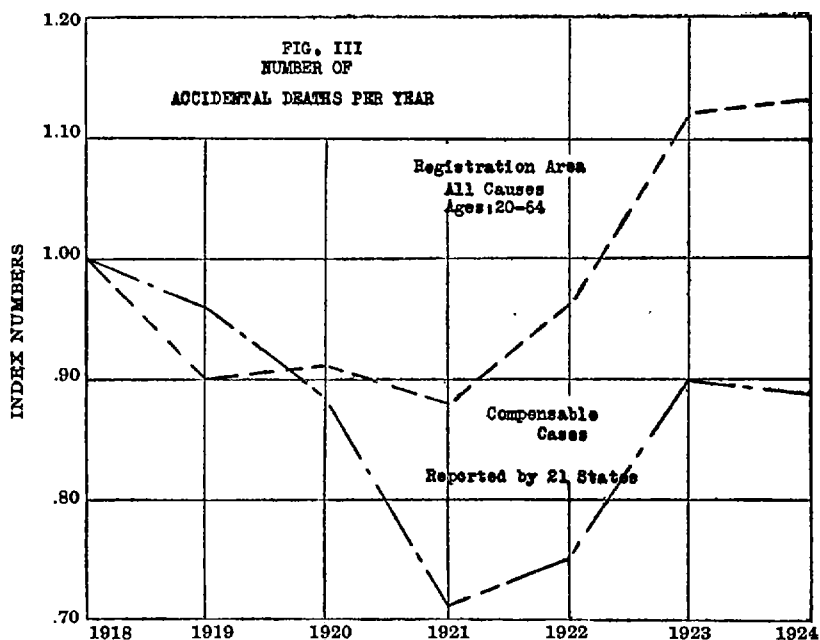
Notwithstanding much bad experience, known or conjectured, I am optimistic enough to believe that the tide has turned and the industrial accident rate has actually declined since 1913. In the case of state statistics, I think the downward trend has been masked by more complete reporting of cases superinduced by progressive liberality in interpretation and application of the acts, and possibly by increased actual, but not necessarily calculated man-hour exposure. As for insurance experience, I feel that as yet it contains nothing sufficiently basic to give us any idea of the general industrial accident rate trend.

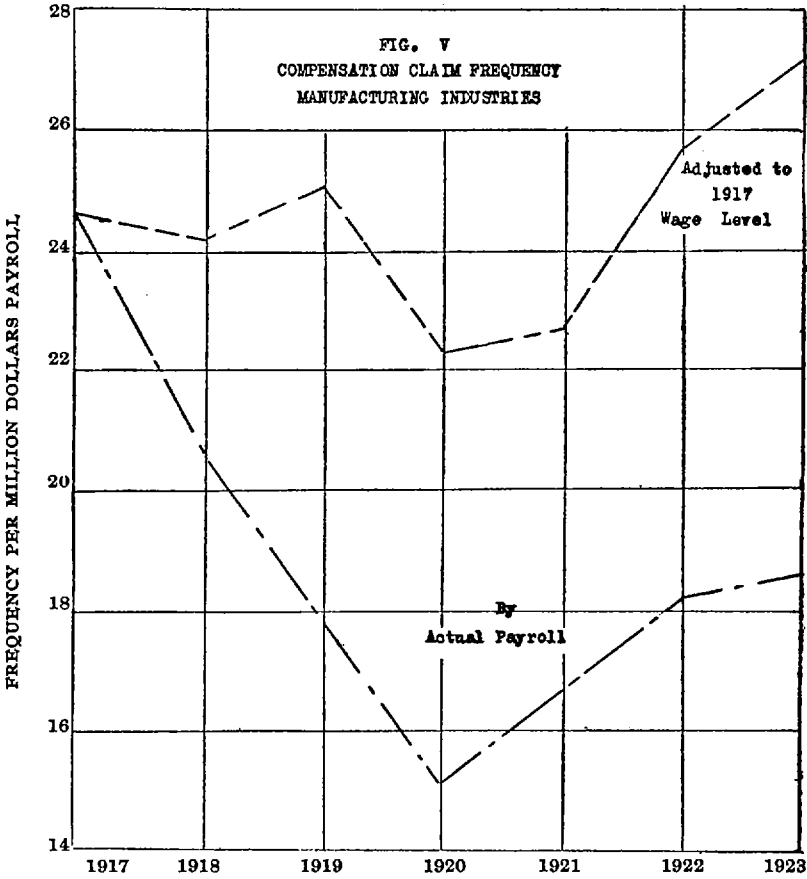
These are personal beliefs which I cannot support with evidence. Perhaps such evidence does not exist, but that, at least, should not deter us from doing our utmost to strengthen the general conviction that accidents can and should be prevented.



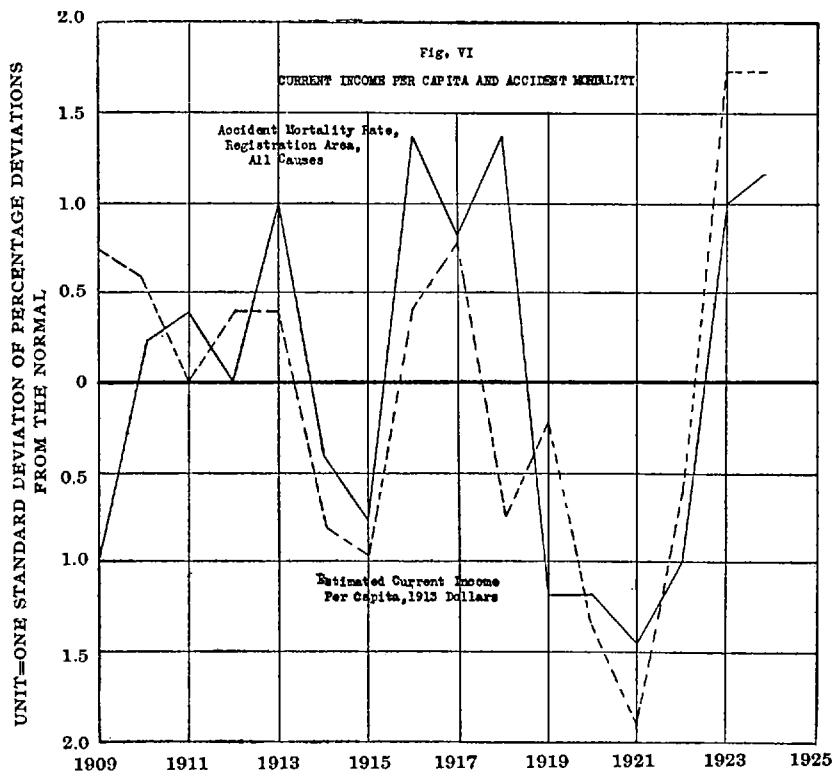


94 HAS THE INDUSTRIAL ACCIDENT RATE DECLINED SINCE 1913?





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GUARANTEERING FIRST MORTGAGE REAL ESTATE BONDS

BY

E. B. MCCONNELL*

New York Vice President and Manager, Maryland Casualty Company

I am informed that your Society has been told with much emphasis, that corporate surety companies are not equipped to guarantee the payment of principal and interest of first mortgage real estate bonds, and I have been asked to give you my reasons why such companies are equipped to write this line on a satisfactory basis.

If I undertook to give you all the reasons which occur to me why these companies should continue to write these guarantees, this paper would, no doubt, become tiresome to you. The subject is too vast to permit of intelligent analysis in the short time allowed me, therefore, I will content myself with outlining only those points which the underwriters of this line have learned to consider most important.

However, before proceeding with the development of these points, let us pause for a moment and consider a gigantic force, which is everywhere and which must be taken into account by the underwriters.

As we all know, this is an age of tremendous activity in which every line of human endeavor is crowding its advancing steps hard upon the heels of those preceding. This rapid-fire progress is producing an enormous accumulation of liquid wealth, with the result that all human life is feeling the impulse and pressure its building up has created. In the last two decades, this irresistible force has completely changed the standard of living of even the most modest of us, and it has followed, that what was good enough fifteen to twenty years ago, is not good enough now. All this is growth, but it is a vigorous, healthy growth and it travels hand in hand with the march of civilization.

This growth means, in a broad sense, improvement, which in turn demands not only the existence of liquid wealth, but the intelligent, conservative and helpful use of it.

In the very nature of things, this demand must be met, not foolishly or carelessly, but with intelligence; not with a stingy

*This paper presented by invitation of the Committee on Program.

hand but with a liberal heart, controlled with broad conservatism. If it is not met in the latter spirit, growth will be stifled, if not actually throttled.

This being true, humanity has a duty to perform, and that portion of it, equipped by inclination and training to aid in the development of growth, owes it to the common cause to lend a helping hand.

With this picture before us standing as a background for the detail which will follow, we turn to the particular class of development we are proposing to deal with—the development of real estate. As a direct result of the irrepressible growth of development in all material things, is the urge to build or improve the homes in which we live and the offices, shops and factories in which we transact business, and as we have seen, there has been accumulated, particularly in this country, a vast fund of liquid wealth which should be available for use in financing the development of real estate.

It, therefore, has come about that there is—

1. An immense volume of real estate improvement demanding attention.
2. A large and insistent demand for funds to use in financing this class of improvement.
3. An insufficiency of funds available for this type of financing, due largely to the fact that the owners of it have not as yet been sufficiently convinced as to the worthiness of this type of investment.

This brings us to a consideration of two propositions—

- (a) The great demand for funds for use in financing the development of real estate, and
- (b) Where these funds are to be procured.

As a result, there has developed, roughly speaking, three sources which are now advancing these funds. (1) Banks, trust companies and private lenders; (2) trust companies of the type of the Title Guarantee & Trust Co. of New York, creating first mortgages on real estate and selling them without corporate surety guarantee of the payment of principal and interest, and (3) mortgage companies of the type of the Empire Bond & Mortgage Corporation, of New York, creating first mortgages on

real estate and selling the same with corporate surety guarantee as to the payment of principal and interest at maturity.

To those who know the situation it has been apparent for some time, that the funds for investment produced by these three classes of lenders are not sufficient to meet the legitimate demand for the same, and I think that this is largely due to the fact that up to this time the owners of funds which ought to be available for use in this market, while fairly satisfied that a security of this type is sound if properly produced, are not by any means convinced that it is sufficiently liquid to suit their purposes.

For the purposes of this discussion, the first class of mortgage lenders referred to need not be dwelt upon further as the methods followed are as old as the hills and usually operate locally and on a restricted basis. But as between Class 2, which sell securities without corporate surety guarantee, and Class 3, selling their securities with corporate surety guarantee, there is a sharp controversy as to which method of producing and marketing is best for the investor, a controversy which may well serve to bring out the good points in their respective methods but which, in our judgment, is not very valuable for increasing the interest of investors in these types of securities.

This brings us to a discussion of the point at issue, namely; "are surety companies properly equipped to guarantee the payment of principal and interest of first mortgage real estate loans"?

Our answer to this question is "yes" but it must be understood that this answer is limited to those surety companies which are writing this form of undertaking. What we mean to say, is that in our opinion the surety companies which are writing these guaranties are fully equipped to perform effectively every function which should be performed in properly underwriting this line, and in order that you may see that this broad statement is based upon an analysis of all of the important factors developed by the investigation of any risk, we herewith furnish an outline of the policy adopted by one of the mortgage companies in making first mortgage loans, for which the Maryland Casualty Company, which I happen to represent, is guaranteeing the payment at maturity of principal and interest of first mortgages, and in calling attention to this so-called policy, we desire to point out that the loan policy of any mortgage company is a very important

factor to be considered, and its personnel, methods, and policies in negotiating and closing its loans are of the first importance to any surety company proposing to guarantee the mortgages it negotiates.

This mortgage company has adopted a policy which it expresses as its "Fourteen Point Policy," as follows:

1. A general survey is made of the location ascertaining the adaptability of the kind of improvements contemplated for the neighborhood.

2. All buildings of a similar nature within a reasonable area are visited in order to obtain the prevailing rentals, number of vacancies and general demand for space.

3. Real estate firms in the neighborhood are interviewed to ascertain asking and selling prices for similar land in the location.

4. Transit facilities are gone into and class of tenants are investigated.

5. The plans and specifications are carefully inspected to see whether the layout conforms with modern and economical requirements and the materials, class of construction and specified finish are in accordance with our requirements.

6. The plans are figured to ascertain the cost of construction.

7. All figures are then compiled into a set-up sheet and referred to the vice-president in charge of the loan department for his inspection and check-up.

8. If then found satisfactory and the amount of loan applied for does not exceed the percentage policy adopted by us, the set-up is prepared in final form for submission to the following:

- (a) The loan committee.

- (b) The executive committee.

- (c) The board of directors.

9. Before a loan is submitted to the executive committee it must first receive the unanimous approval of the loan committee. When the loan committee has approved, the executive committee considers the loan and if found to be satisfactory, the same must be approved by them without a dissenting vote to be accepted.

10. When the foregoing has taken place, an underwriting agreement is entered into with the borrower.

11. Application is made for a title policy insuring the property and all agreements are submitted to our attorneys for their approval.

12. In the case of a construction loan, a bond in form satisfactory to us must be furnished by a responsible surety company, guaranteeing the completion of the building free and clear of all claims and liens.

A sworn financial statement is also required from the borrower showing that the borrower has sufficient cash resources or secondary financing which, when added to the net proceeds of the bond issue, will pay in full for the land, improvements and all disbursements and carrying charges.

References are carefully checked, the history of the borrower is looked into and trade reports are procured.

13. Appraisals from independent recognized appraisers, (members of local real estate boards) are required, giving value of land, estimated cost of construction, value of completed buildings and estimated gross and net income of building.

14. When the above is complied with, then and only then is the issue closed, the mortgage executed and the bonds offered for sale.

All acts of the executive committee are presented to the board of directors for their approval.

It is our opinion, based upon observation and a rather intimate knowledge, that mortgage companies writing this line follow the foregoing or similar policies in developing their loan underwriting, and that, generally speaking, most of them are taking great pains in developing and analyzing the facts, and are taking very little for granted in their underwriting.

Surety companies should not deal with mortgage companies for the purpose of guaranteeing their issues, whose policies do not measure up in every substantial particular to the policy we have outlined, nor should they deal with mortgage companies whose personnel for the administration of such policy does not measure up to the standard expressly required in the making of conservative loans.

From the foregoing it will be seen, that the mortgage company, if it follows faithfully the steps outlined in the foregoing loan policy, or its equivalent, has decided that it is its business to make good loans, and it follows, that if its personnel is honest

and experienced in the making of good loans and is trained to follow the steps outlined in this policy, it will produce first class loans, and it also follows, that if it makes first class loans, surety companies will be perfectly safe in guaranteeing the payment of principal and interest thereof.

At this juncture the question naturally arises as to what may be deemed good loans.

I have heard this question propounded a great many times and now know of no better general definition than that a good loan is one in which the investor can depend that the principal, including amortization payments, interest, taxes and assessments, will be paid as the same mature, but it must be borne in mind that the production of a loan that will make such a record, involves great care to ascertain first, that all the facts are before the underwriter, and second, that these facts are such as to insure these results.

With this before us we now come to the surety company's standpoint of view, and it seems to me that the following requirements of the surety underwriting furnish an excellent answer to those who have been willing to say that surety companies are not equipped to write this line on a satisfactory basis:

General.

1. A surety company should not execute its guarantee except to overcome sales resistance.

2. A surety company should not execute its guarantee except for a corporate lender of sound financial standing, administered by a personnel experienced in making good first mortgage loans, and following closely a loan policy similar to that hereinbefore outlined.

3. A surety company should only guarantee payment of principal and interest of the underlying mortgage or mortgages, and only when the owner and the lender apply for the same and appear as coprincipals in the bond containing the guarantee.

Specific.

4. A surety company should require of the mortgage company a full statement of the details of its investigation, the statement being along the lines and in conformance with the points outlined in the loan policy referred to.

5. A surety company should thoroughly check the mortgage company's said statement both for the purpose of verifying the the same and for forming the surety company's independent conclusions.

6. In forming its conclusions the surety company should pay particular attention to the following:

(a) The type of the improvements must be generally harmonious with the character of the neighboring improvements and must be deemed a dependable producer of income during the maturity of the principal debt, sufficient to pay fixed and operating charges and a reasonable factor of safety.

(b) The conclusion must be reached that the transportation facilities serving the location are so good that occupancy therein will continue to be desirable throughout the period of the maturity of the loan.

(c) The conclusion must be reached that the estimated income (gross and net) of the proposed security is not out of line with other estimates of value reached with the use of other factors.

7. A surety company should require the mortgage company to refrain from making any loan wherein the principal is in excess of 65% of the true value of the security, and should take necessary steps at least once a year to ascertain definitely that the mortgage company is operating within this policy.

By way of recapitulation of what we have heretofore said, it is apparent that the surety company writing these guaranties is taking unusual precautions to protect the purchasers of its securities in that—

1. It deals only with approved mortgaged companies whose loans in the aggregate do not at any time exceed twenty times its capital and surplus.

2. It requires the mortgage company to fully indemnify it in each case.

3. It requires in its possession all title, fire and casualty insurance necessary to protect it.

4. It requires a good loan and takes every reasonable precaution to obtain it.

5. It reinsures from 75% to 80% of its liability on each risk.

It will, therefore, be seen that there is no real reason why surety companies should not successfully conduct the business

of issuing these guaranties. They have had a long experience in adjusting claims involving every conceivable kind of any investigation, and in my opinion are ideally equipped to make unusually searching investigations and to dig up the real facts.

Finally—it is our firm conviction, that when the vast body of investors who like real estate but who are not yet convinced as to the desirability of guaranteed first mortgage real estate bonds, really become acquainted with the extreme care the surety company is taking to warrant it in issuing its certificate of approval of these loans—for that is what it means—they will not only approve of this type of investments but will buy them.

INSTALLMENT NOTE GUARANTEES BY SURETY COMPANIES

BY

LUTHER E. MACKALL*

Vice President, Metropolitan Casualty Insurance Company

The sale of commodities on the instalment plan has grown to enormous proportions. It is estimated that 70% or more of all automobiles sold at retail are sold on the instalment plan; and a large percentage of graphophones, washing machines, vacuum cleaners, and the like, are sold under the same plan.

These sales are made on the basis of a certain amount in cash and the balance payable in twelve or more equal monthly instalments, the deferred payments being represented by promissory notes. Banks, as a rule, do not accept notes having maturities beyond six months, so that banks have, for the most part, been unwilling to accept this class of paper directly from dealers. The result is that a large number of finance companies have been formed throughout the country for the purpose primarily of discounting or purchasing this class of paper; and in many cases the manufacturer finances the instalment sales of its product.

The margin of profit that can be made by a finance company on a single transaction is so small that if it were able to use only its own capital, it could hardly make enough money, in the aggregate, to pay operating expenses and a reasonable return on the capital invested. The finance companies, therefore, always seek to do a certain amount of refinancing, that is to say, rediscounting instalment notes which it has purchased or borrowing money, using the instalment notes as collateral. When a manufacturer undertakes to finance the instalment sales of its product, it is almost always necessary for the manufacturer to arrange rediscount facilities, as very few, if any, manufacturing companies have sufficient working capital to handle any substantial volume of instalment notes in addition to carrying on their operations.

The large finance companies like the General Motors Acceptance Corporation, Commercial Credit Company and Commercial Investment Trust Company, are able to obtain all the rediscount facilities they desire without the aid of the surety

*This paper presented by invitation of the Committee on Program.

companies; and almost all of the finance companies are able to obtain some rediscount facilities at their local banks. It is a fact, however, that most of the small or moderate-sized companies have need for, or could use, additional facilities if they were available, and while perhaps only a small percentage of the finance companies actually use surety company facilities, there is no doubt that if these facilities were available on terms that would leave the finance company a margin of profit, they would be used to a very large extent.

The question that confronts the underwriters in this connection is whether the surety companies can safely provide these facilities and, if so, on what basis.

The surety companies have been providing this service to a greater or less extent for a number of years, and it may be appropriate at this time to review the more important plans by which this service is provided—

1. Where the money is borrowed by the finance company or the manufacturer, from a bank and where the bank takes the notes of the finance company or the manufacturer secured by an equal amount of instalment notes, and the surety company furnishes a bond to the bank by which the surety company, in effect, guarantees to the bank, payment of the instalments as they mature. The surety company usually requires a margin of at least 15% in the form of certificates of deposit which represent all or a part of the compensating balance which the finance company or the manufacturer is required to maintain at the bank. This is the plan under which most of the business is handled.

2. Where the purchasers' notes are deposited with a trustee or the surety company as collateral security for the issuance by the finance company or the manufacturer of its own promissory notes which are usually known as collateral trust notes. The surety company, in that event, may either guarantee to the trustee, for the benefit of the holders of the collateral trust notes, payment of the purchasers notes which are held by the trustee or may directly guarantee payment of the collateral trust notes. In either event a margin of collateral is required and this may be in the form of an excess of purchasers notes (a ratio of 120 or 115 to 100) or it may be in the form of cash or certificates of deposit, or partly in the form of an excess of purchasers notes and partly cash or certificates of deposit.

3. Where the purchasers' notes are made payable directly to a bank and where the surety company guarantees to the bank the payment of the notes and where the bank is required to deduct from each note discounted an agreed percentage which constitutes a loss fund and out of which all losses are paid. This bond is in effect an excess policy—a guarantee that the losses in the aggregate will not exceed the specified percentage or, if they do, that the surety company will pay the excess.

It will be observed that all the plans for handling this business contemplate that the surety will have, in addition to 100% of purchasers' notes, a margin to take care of contingencies. Where the instalment notes are payable at the office of the finance company, the usual margin is 15%; and where the instalments are payable directly to the obligee bank and the bank deducts from each note discounted a certain percentage as a loss fund, the percentage deducted ranges from 3% to 5%. The average loss ratio of finance companies on automobile paper is around 1%.

It would seem that if the surety company guarantees payment of a block of instalment notes, and if it is protected not only by the endorsement of a finance company or the manufacturer, but also by a margin of collateral five or more times in excess of the normal loss ratio on that class of instalment notes, the company would be adequately protected and there would be no losses. It seems, on its face, like writing bonds with full collateral. It is a fact, however, that losses have been sustained; and in order that we may fully comprehend the risk that is assumed in guaranteeing instalment notes, it will be advisable to review these losses. There are five of them.

The first loss occurred in 1924. A certain fairly well known finance company, which was obtaining rediscount facilities at about twenty banks, was solicited by a broker to have its notes guaranteed by a surety company in order more readily to obtain rediscount facilities. The finance company consented to try it. The business was brought to a surety company which was seeking to develop this class of business. A detailed auditor's report was presented which showed receivables aggregating approximately \$700,000 and liabilities of approximately \$350,000. Investigation was made at fifteen or more banks and every reply was favorable. It appeared that the finance company had an excellent standing and reputation. The business was accepted and

notes were guaranteed in favor of a number of banks. In a few months the surety company was notified of defaults on the notes it had guaranteed. Within thirty days, the finance company was put in the hands of a receiver and it was found that more than 60% of its notes receivable were fictitious or valueless. The good notes were collected by the receiver and the surety company made good on all the notes that were not collected. The net loss on this guarantee stands today at approximately \$60,000. It should be said, however, that the company has been re-organized and is operating, and it is probable that the greater part, if not all, of this loss will be recovered.

The next loss was brought to light in the early part of 1927, when one of the large eastern finance companies was placed in the hands of a receiver or in the hands of the surety company which had guaranteed its notes. It developed that the officers of the finance company had been permitted to sign the name of the surety company as guarantor of the notes of the finance company, that the surety company was then the guarantor on a very large volume of the notes of the finance company, and that among the notes guaranteed, were approximately \$4,000,000, which were secured by liens upon taxicabs, and that these notes were not collectible and that the cabs were of comparatively small value. It is reported that the company had on its books a substantial volume of other classes of paper that could not be collected. It is reported also that the surety company had directly guaranteed the notes of the finance company and that these notes were not on a self-liquidating basis, that is to say, the finance company's notes were payable either on demand or in two, three or four months, while the underlying purchasers' notes were payable in twelve equal monthly instalments. The surety company is in charge of the affairs of the finance company and the amount of ultimate loss, if any, is not known to the public.

The next loss came to light later in the year 1927, when the finance company became embarrassed and was unable to meet its obligations. Its troubles appeared to have been due to the fact that it was handling a fairly large volume of notes of purchasers of a certain truck, the manufacturer of which went into the hands of the receiver. It appears that the managers of this finance company were not at all careful in the selection of the individual risks and, as a matter of fact, they accepted a large

number of transactions that had been rejected by another finance company which was expert in the handling of truck paper. The defaults on this truck paper, together with other defaults—due mainly to poor selection of risks—made it impossible for the finance company to meet its obligations to banks; and inasmuch as these obligations had been guaranteed by the surety company, it was necessary for the surety company to make good. It is understood that this case is now being worked out and that the amount of ultimate loss is as yet undetermined. It is understood that the surety company is on notes aggregating several hundred thousand dollars.

The fourth loss has only recently come to light. In that case the surety company guaranteed to banks instalment notes of purchasers of taximeters, these guarantees having been furnished at the request of the manufacturer or seller of the taximeters. This account had been taken three or four years before when only a few thousand dollars of notes were involved. The account had grown until the surety company had outstanding approximately \$175,000 of guaranteed notes when, out of the clear sky, the surety company was notified of default. It then developed that the manufacturer, having a good deal of pride in its apparent success, had started on a program of expansion, which resulted in tying up in plant such a large portion of its working capital that it was unable to meet its immediate obligations. The surety company then undertook to collect from the purchasers of the taximeters the instalments as they became due. Many of the purchasers refused to make payment; and it developed that it would cost the surety company an expense of \$22 to repossess a taximeter and that, inasmuch as the owner of the taxicab could obtain a new meter upon the payment of \$15, he, as a rule, let the taximeter be repossessed. It appears that the manufacturer of the taximeters had not been using the legal process of repossessing the meters, but had been resorting to rather high-handed methods, which, however, were successful, so that they saved the cost of repossession. The surety company, naturally, cannot pursue such high-handed methods, but must pursue the legal, but more expensive, way. The outcome of this case is at this time uncertain, and the amount of loss can hardly be estimated.

The fifth and last loss is understood to be quite large and may reach several hundred thousand dollars. In this case, a certain

company was manufacturing or selling vacuum cleaners and was discounting its instalment notes with a large finance company. The finance company, without the knowledge of the manufacturer, applied to the surety company for an "ultimate loss" bond. The bond was approved and the form was carefully prepared by an attorney for the company. It has developed that subsequently, and without the knowledge of the officers or underwriters of the surety company, there was attached to the bond, an endorsement which in effect made the bond a direct guarantee to the finance company of all the notes discounted for the manufacturer; and the worst of it was that the endorsement did not require notice of default and did not contain other usual restrictive provisions. When the surety company received the first notice of trouble, it was advised that the finance company held some \$325,000 of notes which were in default or where the machine had been repossessed. It developed also that the manufacturer had been very careless in the examination of the individual credit risks, it appearing that the man who was in charge of sales and received a commission on all sales made was also in charge of the credits and permitted practically all transactions to pass. It is believed that the percentage of defaults will be very large and the aggregate loss will be very substantial.

What lessons can be drawn from these losses?

The first lesson is that there is a vast difference between the actual and the theoretical risk on business of this class. Theoretically, companies should be able to handle this business without any loss whatever, inasmuch as they seem to be fully protected by collateral; yet as a matter of fact, when the five trouble cases have fully developed, the loss ratio on this class of business will probably be much higher than the average loss ratio on surety business, and if the losses are as large as it is feared they may be, the aggregate losses may be much in excess of the aggregate premiums.

The second lesson is that, inasmuch as these losses appear to be due, in large part, to the failure of representatives of the companies adequately to supervise the details, it is necessary for the companies, if they hope successfully to write this class of business, to put the handling of it in charge of high-grade men and require them to check every detail in connection with the handling of the business and give them the facilities for so doing.

The third lesson is that the price to be paid for carelessness in the handling of the details of the business may be very great, inasmuch as it seems to be necessary, as a practical matter, to take a fairly large line for a single institution, so that when something goes wrong, the loss is quite substantial.

It would seem to be appropriate at this time, having in view the experience of the companies and the expressed views of the leading underwriters, to suggest the broad underwriting policies which it is believed the companies should follow if they are to handle this class of business.

1. There are many reasons for the conclusion that the companies should adhere strictly to the policy of handling this class of business only for finance companies engaged exclusively in this line. The handling of it for dealers or manufacturers involves several risks which are not involved when handling it for a finance company, namely,

a. A dealer or manufacturer may become involved from causes which have nothing to do with the loss ratio on its instalment notes, as, for example, by unwarranted plant expansion at an inopportune time, or bad business judgment in other respects.

b. If a manufacturer does become involved financially, and the output of his product ceases, there is always an increased difficulty in the collection of instalment notes secured by the commodity put out by that manufacturer.

c. If a surety company once begins to guarantee instalment notes for a manufacturer, it may be difficult for the company to withdraw, inasmuch as the withdrawal of its service—unless replaced by the service of some other company—would very likely cause embarrassment on the part of the manufacturer, and probably a receivership.

2. There is considerable doubt as to the wisdom of guaranteeing notes representing deferred payment on a product in connection with which the percentage of defaults is unusually large, as, for example, taximeters, vacuum cleaners, household furniture, and the like, particularly if the product is of comparatively small value and the cost of collecting the instalment or repossessing the article is relatively large. If one or more of these classes constitute only a small part of the business of a finance company whose other lines are satisfactory, there may be no objection, but if it constitutes the sole business of the manufacturer or finance

company which makes the application for the guarantee, the desirability of the account seems open to serious question.

When we come to consider guaranteeing automobile paper for finance companies, it is believed that the following underwriting principles should be applied—

1. That only notes of the ultimate purchaser at retail should be guaranteed, all dealers' notes being eliminated. If dealers' notes are to be considered, they should be treated as a separate class and should be underwritten on a different basis.

2. That notes representing the deferred payments on taxicabs should not be considered, as this is manifestly a substandard class of paper on which the percentage of defaults is very large.

3. That notes representing the deferred payments on trucks (except the so-called light or delivery trucks) should be considered as a separate class, and this class of business should not be accepted from the ordinary finance company. Farmer & Ochs Company have handled a large volume of this business and have used the guarantee of the surety companies, but they have specialized in this line, having in all cases the endorsement of the manufacturer; and the average finance company is not able to obtain this business on that basis.

4. That notes representing the deferred payments should be guaranteed only if the cash payment represents not less than $33\frac{1}{3}\%$ of the time selling price on new cars and 40% of the time selling price on used cars, and if the balance is to be paid in not more than twelve equal monthly instalments.

5. That a finance company should not be permitted to borrow in the aggregate more than four times its net paid in capital and surplus; and this ratio of 4 to 1 should be permitted only to take care of what is known as the "peak load" during the late spring or early summer months. A well conducted finance company can make a good margin of profit even if limited to a ratio of 3 to 1; and in practice the better managed companies do not exceed this ratio.

6. That if collateral trust notes are to be guaranteed, they should be issued on a strictly self-liquidating basis so that the maturities of the collateral trust notes correspond with the maturities of the instalments of the underlying purchasers' notes. It is customary to list the purchasers' notes on a schedule so as to show the aggregate instalments maturing during each calendar

month and then issue collateral trust notes to mature at the end of each month, each note being for an amount not in excess of the aggregate instalments for the corresponding month. If the collateral trust notes are being issued in a ratio of 100 to 115 or 120 of purchasers' notes, this ratio should be maintained with regard to each of the monthly notes.

It is not particularly difficult to lay down and follow sound underwriting principles like those above suggested. Assuming this to be done, it seems to me that the real problem which confronts the underwriters is to make sure—

1. That all the notes which the company guarantees, as well as all the other notes in the portfolio of the finance company, are genuine notes, each note being actually made by the person whose name appears on the note, as the maker, and that the sale has been made in good faith and the car described in the papers actually delivered to the maker of the note; in other words, that each transaction is in all respects what it purports to be; and

2. That each purchaser has been suitably investigated and is in fact a reasonably good credit risk and able, except under some abnormal condition, to make the monthly payments required.

If these two features are adequately covered and if the other underwriting principles above suggested are applied, and if the details are carefully handled so as to avoid serious "accidents," it is believed that the automobile note guarantee business for finance companies can be handled without any loss whatever. In order to check the two items above mentioned, as well as to cover adequately the necessary underwriting features, it is deemed essential that the finance company be required to present the report of a detailed audit by an audit company or a firm of certified public accountants, who are not only reliable but who are experienced in this particular class of auditing. The audit should embrace not only the making up of the complete balance sheet with appropriate schedules, but should include a check of a sufficient percentage (say 10% to 20%) of the original papers covering individual transactions to satisfy the accountants and the surety company that the transactions checked are representative of the entire volume of business on the finance company's books. The original papers should be investigated to determine—

1. The percentage of cases in which an inquiry was sent by the finance company to the original purchaser to verify the genuineness of the transaction and the percentage of cases in which a reply was received.

2. The percentage of cases in which suitable investigation was made of the purchaser and the percentage of poor credit risks.

3. The percentage of used cars as compared with new cars, and ordinarily this percent should not exceed 30%.

4. The percentage of trucks as compared with passenger cars and the type of trucks, if any.

5. The percentage of defaults, the percentage of repossessions, the percentage of repossessed cars on hand and the loss on the sale of repossessed cars and the actual loss ratio of the finance company on business handled during the past year or two.

It is suggested also that a surety company handling this business for finance companies should not only require an auditor's report at least annually, and possibly semi-annually, but should also, at least once a year, send its own representative to the office of the finance company for the purpose of making a check of the papers in connection with a substantial percentage of the original transactions of the finance company for the purpose of making the verifications above suggested. It is believed that a check by an outside public accountant once a year, together with a check once a year by a salaried employee of the surety company, would be sufficient to detect any signs of falsity in the assets of the finance company; and if all the notes are genuine and are actually what they purport to be, there is, in my opinion, little, if any, chance of loss on this class of business, assuming the standard underwriting conditions are applied.

In this connection it should be noted that if the purchasers' notes are made payable at the obligee bank instead of at the office of the finance company, an automatic check of the genuineness of the notes is provided, for if the purchaser himself pays the first instalment, the possibility of the note being fictitious is practically eliminated. This also eliminates the chance of loss through the failure of the finance company to turn over to the bank collections actually made.

It seems to me that the two risks which are thus eliminated, constitute the real hazard on these instalment note guarantees.

When these two risks are eliminated, the risk is boiled down to losses through failure of purchasers to make the instalment payments, which of course would be reduced by such amount as might be realized from the sale of repossessed machines.

It is not difficult to obtain a sufficient margin of collateral to cover this loss, even under very adverse business conditions, and it is suggested that the surety companies make a concerted effort to obtain the business on this basis.

So much for the guaranteeing of purchasers' notes or the notes of a finance company secured by purchasers' notes.

During the past few years, there has developed a plan by which purchasers' notes guaranteed by a surety company are deposited with a trust company as collateral security for the issuance of a series of collateral trust notes, which, in turn, are guaranteed by one or more surety companies. The collateral trust notes thus guaranteed are being distributed by one of the leading commercial paper houses and many million dollars of them have been distributed, and the present market for them is said to be very good. This plan was originated by Farmer & Ochs Company, and under this plan, they have successfully handled a large volume of truck paper.

Inasmuch as the guaranteed collateral trust notes which are sold to investors are secured by an equal amount of purchasers' notes which are guaranteed by a surety company, it is apparent that the guarantors on the collateral trust notes are assuming practically no risk beyond that of the continued solvency of the guarantor of the underlying notes. The rate for this top guarantee is correspondingly low.

During the past year, two companies have been formed here in New York for the purpose of providing rediscount facilities for finance companies. Neither of these companies has made much progress, but it seems likely that within a short time there will be developed a satisfactory plan under which the surety company can, by virtue of this double guarantee, aid in providing rediscount facilities for finance companies. This is important because it is not always easy for a finance company to find a market for its notes even after they have been guaranteed by a surety company, while the market for the notes secured by the double guarantee is excellent.

Inasmuch as this plan contemplates the payment of a premium for the guarantee of the underlying notes, as well as the premium for the guarantee of the trust notes, the plan is at the present time rather expensive, but it is probable that this difficulty will in due course be overcome.

My own view, therefore, is that the surety companies can successfully operate in this field of guaranteeing instalment notes and that if they are conservative and careful, they can make some money.

ABSTRACT OF THE DISCUSSION OF PAPERS READ AT THE PREVIOUS MEETING

HEALTH INSURANCE HAZARDS REFLECTED IN OCCUPATIONAL
HEALTH LOSS RATIOS—ARMAND SOMMER

VOL. XIII, PAGE 181

WRITTEN DISCUSSION

MR. JOHN M. POWELL:

Mr. Sommer has approached this problem in a very interesting manner. The results appear to be logical although, without doubt, there is room for considerable difference of opinion in the allocation of the individual occupations to the various groups. For example, in the case of teachers, would it not be natural to assume that in many cases an illness suffered during a vacation period would result in a greater claim than the same illness suffered during active employment? If this is the case then it would seem that teachers should be classified in Group III under the subjective hazard. As a matter of fact, however, the loss ratio for teachers is very satisfactory. Apparently, therefore, any such tendency is more than counterbalanced by other favorable characteristics.

The author refers to the fact that the experience under the larger weekly indemnity policies was very unfavorable. In an attempt to measure the effect of this on his groupings we calculated the number of weeks' total disability in the respective groups for each year of exposure and found them to be as follows:

Objective		Subjective	
Group I	.63	Group I	.61
Group II	.73	Group II	.70
Group III	.78	Group III	.90

From these figures it will be noted that the relative spread is greater between Groups I and III than it is in the tables submitted by the author. This would seem to indicate that, excluding the effect of large policies, the differences resulting from the occupational factors or the characteristics of the insured have an even greater effect than that brought out in the table.

Again using the same groupings that the author has used we applied this to the report of the Committee of Five for the year 1924 alone, the results being very consistent with those appearing

in this paper, although in the case of the subjective groupings the difference was somewhat less marked.

Apparently, the author feels that no attempt should be made to establish classifications of occupations according to health hazards, although later he states that further investigation may indicate that some occupations should probably bear a higher rating as a group. If by this he means that no great refinements should be made but that there should be two or three broad groups, it would seem that there would be considerable justification for this view.

It is to be regretted that a sufficient volume of statistics was not available to warrant the author in making the combination of the objective and subjective factors to which he refers.

AUTHOR'S REVIEW OF DISCUSSIONS

MR. ARMAND SOMMER:

Mr. Powell's few paragraphs on my article are both interesting and appropriate to the subject. It is very true that there is room for discussion and controversy over almost any one of the occupations as far as grouping is concerned, and the factors influencing our choice must of necessity be considered academically rather than empirically.

Taking teachers as an example, I believe there is no occupation that presents a less moral hazard, and whereas it is true that all teachers have a period of what might be termed "unemployment" in the nature of their comparatively long vacations every year, these vacations are not the hazard of the usual manufacturing or mercantile or even professional vacations. A teacher does not arrange a vacation with the utter abandonment of the thoughts of his occupation that is characteristic of other occupations, but rather plans a both busy and profitable interim between teaching periods. The percentage of teachers who take educational trips or who study in summer courses or even who instruct during vacation in locations foreign to their regular teaching is very great. We believe that the combination of the moral integrity and the busy vacation season unquestionably places teachers in group one from the subjective standpoint. The same course of reasoning with a different line of logic, of course, could be applied to any of the occupations.

Mr. Powell's remarks about large indemnity policies and groupings by accidents of total disability bears out the results I obtained and is a very desirable amplification to my data.

It was not my intention to recommend a grouping of classifications for different health insurance ratings at this time, although I believe our experience indicates that such a grouping is possible. My article merely hinted at the possibility of working out a plan to obtain more complete and more detailed statistics on health premiums and losses with the possibility in view of arranging a very few broad groups of health classifications according to the needs shown by a careful analysis of a much greater statistical spread. A resurvey along the lines of my article, made in such a way as to eliminate any possible deviation due to personal judgment and compiled from years of detailed data, should be interesting and profitable to the Health Insurance business.

COMPULSORY AUTOMOBILE INSURANCE—WILLIAM J CONSTABLE
VOL. XIII, PAGE 188
WRITTEN DISCUSSION
MR. FRANK R. MULLANEY:

One of the purposes of the Society that is served through the medium of its *Proceedings* is the creation and maintenance of an historical record of the casualty insurance business. The latest important development in that field is the enactment of compulsory motor vehicle insurance laws and as has happened before in other social legislation Massachusetts is again a pioneer and lights the way for other states by being the first state to pass a compulsory insurance law which applied to all motor vehicles, other states having enacted such laws but limiting their application to certain classes of motor vehicles only, principally public vehicles carrying passengers for hire. It is to be expected therefore that the results obtained under the operation of the Massachusetts Law will be carefully watched and undoubtedly other states will follow by enacting similar laws. Mr. Constable, through his excellent paper, has presented to the insurance fraternity and to the public, the first authoritative record on the subject which will most probably be referred to many times in

the future in any discussion of compulsory automobile insurance rate making.

In order that an insurance company may operate successfully it must, through its underwriting department, exercise its right to select from those offered to it, the risks which it desired to insure. When the compulsory motor vehicle insurance law was first considered and also after it was passed there was considerable apprehension among underwriters as to how they could continue to select their risks, considering the fact that the law in compelling all motor vehicle owners to insure must also provide to such owners the means to meet the requirements of such law. This problem was happily solved in Massachusetts in the real American manner of settling controversial questions—arbitration—by the requirement that a Board of Appeals be created to whom any motor vehicle owner could appeal in the event that he was unable to obtain insurance. The writer agrees with Mr. Constable that the Board of Appeals has been fair and sincere in their consideration of the cases brought before them. It must be admitted that under a new set of conditions which might well be termed an experimental stage, difficulties will arise and some mistakes may be made but experience will be of considerable assistance to the Board of Appeals as time goes on.

As Mr. Constable points out, the rating authorities were faced with a very difficult problem in determining rates as the only experience available was that developed under a voluntary system of insurance. The question naturally arose as to whether or not the uninsured cars produced more accidents than the insured cars; whether the bulk of uninsured cars were owned by persons financially irresponsible and therefore losses would not have been paid or judgments, when obtained, not collected or satisfied; whether the attitude of claimants and juries would result in increased damages in view of the fact that the law compelled every owner to provide financial security, by means of an insurance policy, bond or deposit of securities; all of these questions had to be answered on the basis of judgment, not only by the insurance companies, but also by the Insurance Commissioner. The former came to the conclusion that a factor of increased cost under the new law should be included in the rates but the Insurance Commissioner decided such a factor was unnecessary. Justification of the position taken by either will of

course be found later when experience under the law is available, but until such data has been accumulated, the positions taken must be considered a difference of opinion.

One of the accomplishments of the Governing Committee of the Massachusetts Bureau was the revision of the territorial divisions which had previously been used under the voluntary system of automobile insurance. Consideration of the local situation demonstrated absolutely the futility of numerous divisions. As a matter of fact, some of the committee were and probably still are of the opinion that two territories might have served as well as three. The writer can not agree with the proponents of the proposal to have no territorial divisions in the state as it has been proven from past experience that accident hazards in the rural sections are considerably different from those existent in towns and cities.

Undoubtedly there will be considerable interest manifested in the tabulation of Massachusetts automobile experience which will be compiled in the late spring of 1928 covering the first complete year of operation under the Act. It will also be interesting to compare the results with the predictions made by various underwriters. The writer has never felt pessimistic as to the situation and although the data for the year 1927 is not yet available, feels that the great fears of some will not be realized.

It is claimed that the cost of claims arising out of automobile accidents has shown an increase country-wide during the last year or two. As this condition has developed under a voluntary system of insurance, the data for Massachusetts under a compulsory insurance system will provide a most interesting comparison, not only as to claim cost but also accident or claim frequency. The Bureau, companies and state organizations have cooperated to the fullest extent in an accident prevention campaign in Massachusetts and good results are expected. Dependable data on this feature of the automobile situation in Massachusetts are not yet available but with the accumulation of complete statistics from company records we should be able to determine with reasonable accuracy whether or not accidents and claims are being reduced and also as to the effectiveness of compulsory insurance as an accident prevention medium.

In closing, Mr. Constable is to be commended for his very

complete paper and it is to be hoped that when the Massachusetts experience is available he will present another paper setting forth the developments in the situation and thereby keep our members authoritatively informed on the subject of compulsory automobile insurance. To those who have in the past expressed some doubts as to the results to be obtained under the compulsory insurance system, may I use the words of President Coolidge, uttered when Governor of the state—"Have faith in Massachusetts."

REVIEWS OF PUBLICATIONS

RALPH H. BLANCHARD, BOOK REVIEW EDITOR

The Insurance Commissioner in the United States. Edwin Wilhite Patterson. Harvard University Press, Cambridge, 1927. Pp. xviii, 589.

This fine and comprehensive work can hardly be adequately covered in the brief space of a review. Its general object may be expressed as an attempt to advance the development of the administrative law by taking a single one of the great administrative offices and showing its relations to the general framework of government; how it is tied in to the administrative organization of the state; how it affects and is affected by the legislative and the judicial branches of government; its powers and duties, and the rights of those subject to its jurisdiction; and the extent to which those powers, duties and rights are defined by statute and the methods whereby they may be made effective.

The author and Professor Frankfurter in the introduction agree that the administrative law is a branch of law still in the making. By the administrative law I presume is meant not only the evolution of definite concepts by the courts as to the proper limits of the authority of administrative officers and the rights and duties of others with respect to such officers, but the development of a public policy with regard to such matters, expressed and embodied in constitutions and statutes. One gathers from the work the distinct impression of an old order of things passing away, and a new concept of government gradually growing up. The old doctrine of separation of governmental powers in particular is regarded as being, if not broken, at least very badly bent. I am far from denying the accuracy of this. Certainly in the early constitutional history of the United States the doctrine was taken very, very seriously, and a valorous attempt made to apply it rigorously; probably more rigorously than was ever intended by its makers, certainly more rigorously than it proved practically possible to apply it. Certainly the courts have always exercised a certain legislative power. In *Southern Pacific Railroad Company v. Jensen*, 244 U. S. at P. 221, Mr. Justice Holmes says, "I recognize without hesitation that judges do and must legislate, but they can do so only interstitially; they are confined from molar to molecular motions".

And without this, the courts would be singularly impotent. Similarly it would hardly be possible for administrative officers to function if they must refer every question of legal interpretation to the courts, or if they must go to the legislature to draft every rule of procedure or to clean up every question of doubt in the statutes. To use a familiar instance, when a policeman brings his night stick down on the head of a disturber of the peace, he in effect constitutes himself, judge, jury and executioner. He makes findings of law and fact, renders a verdict, pronounces judgment and executes it. He may even on occasion manufacture a little home-brewed law for immediate consumption. Yet without some such summary and plenary powers the public peace becomes and remains unenforceable, and in such cases the doctrine of separation of governmental powers must perforce take a back seat.

One cannot, however, fail to recognize the force of the contention that the more recent and ambitious experiments of the states with the police power have stretched this summary and plenary jurisdiction of administrative officers very far. Like the policemen, these officers have become to a degree judge and legislature and lord high executioner to boot. Their power can no longer be termed merely interstitial. The legislature has not only left very wide interstices but has explicitly or implicitly recognized their power to fill them. They have broad powers to make regulations, ample opportunity for the exercise of discretion. The result is to give the individual more and more to a reliance upon the equity and mercy of the official.

This policy may be ascribed in part at least to legislative incapacity to evolve highly refined statutory rules to cover complex and highly mutable conditions; in part undoubtedly to sheer inability to find time even to attempt the task. The legislative machine is a ponderous affair, and normally moves rather deliberately. Modern conditions have loaded upon it a huge mass of extremely varied problems involving a vast detail, and requiring oftentimes delicate and scientific handling. Anyone who has witnessed the operations of a legislature, particularly during the hectic closing days of a session, can hardly fail to sense the groaning and creaking of a badly overloaded governmental machine. Forced to do much more than it can do well, its ability to function as an effective director of the adminis-

trative arm is much prejudiced; and as a consequence, all administrative officers from the governor down have gained by default much power at the expense of the legislative branch; more, perhaps, than is either safe or desirable.

How this growing power may be made safe is a real and vital question. On this, everybody has his pet theory. The theory of the author is, if I may say so, a very lawyer-like one. He would multiply statutory provisions, defining and delimiting the various powers of the executive officers, sprinkle the laws liberally with provisions for notice and hearing, and for appeals to a superior administrative tribunal; and would secure wide latitude for appeals to the courts and encourage the courts themselves to assume a broader jurisdiction to correct the use of discretion by administrative officers. He would vest the governor with an ample power of appointment and removal, restrained only with elaborate provisions as to qualifications and causes of removal, and of course, rights of notice and hearing. My own idea is that this course is better calculated to complicate and delay the work of government than to produce any real betterment of conditions. The real cause of trouble lies somewhat deeper than deficiencies of the statute book, and diddling with words will never cure it. To make government efficient, it must be remodeled along business lines. We need a new check on the administrative arm, some relief for the badly overburdened legislative arm. This might be met by creating an intermediary body of small size, possibly on the model of the Massachusetts executive council, preferably perhaps consisting of the governor, the presiding officers of the two branches of the legislature and a certain number of additional members appointed by each branch of the legislature outside its own membership. This might, like the Massachusetts body, act as a check on the appointive and pardoning power of the governor and on the operations of the state financial officers. It might take over the more detailed legislative functions, leaving the legislature free for those purposes to which it is well adapted, the declaration of broad issues of public policy and general control of the state income and state appropriations. It might also act as a check upon the administrative officers generally, approving their regulations, and taking cognizance of appeals based on a misuse of their discretionary powers.

This suggestion is made chiefly to indicate a conviction that the

situation demands a political remedy rather than a meticulous tinkering with the statutes. For the author's peace of mind, it is perhaps well that he did not take pen in hand and attempt to put his suggestions into concrete statutory forms. The process of criticism is always easier than the process of construction, and, it may be added, the process of constructing a legal edifice to one's own liking is considerably easier than selling it to a skeptical legislature. But leaving this difference of opinion as to remedy, I do not wish to be understood as decrying the value of the work. In his dissection and analysis the author has encompassed a huge mass of detail, and presented to us a picture of the commissioner from a novel standpoint. He has pointed out the possibilities of the office in a most convincing way, and has, I think, been careful to indicate the difference between the possibilities and the actualities, doing full justice to the general uprightness and diligence of those who have filled the office.

Turning from the general to the specific, I wish to touch briefly on the various parts of the work, following the divisions made by the author:—

A. Personnel and Organization.

1. Type of organization.

The office of commissioner is in some states elective. It is still in some states an adjunct of one of the elective state offices. More commonly it is appointive. In a few states it is a constitutional office, more generally statutory. The prevailing type appears to be a single-handed office, though the board type still lingers. While the author is undoubtedly right on the point that of late years it has been a not uncommon practice to put the rate-making power into the hands of a board, I question his nomenclature in styling these boards as boards of insurance commissioners.

There is no particular controversy, however, on the main points of his thesis. The office should be appointive rather than elective, statutory rather than constitutional. The single-handed type presents decisive advantages over the board type in adaptation to prompt and decisive action, ability to handle detail and in concentration of responsibility. I hardly concur in the author's list of advantages of the board type. This type, properly constituted, does have a certain advantage in continuity

in office. The greater variety of qualifications possible under this type is, however, of less consequence than the inevitable dissensions and delays and the diffusion of responsibility which it entails. Furthermore, there are few states where the work of the office is enough to warrant the creation of a board having no other functions.

His suggestion of a single-handed commissioner operating under an administrative board I should hardly concur in, except as a feature of a profound and far-reaching constitutional change such as I have outlined above. Under present conditions the multiplication of administrative mechanisms appears more apt to produce delay and inefficiency than afford any real relief. The suggestions as to a board of control made up of representatives of all conflicting insurance interests is, as he states, impossible, and I think I should be inclined to add, unfortunately so, for the meetings of such a board would be well worth witnessing, assuming that a large enough hall could be secured for their assembling.

2. Methods of appointment and selection.

The author lists 15 states where the commissioner is elected, 8 of these being states where the office is an appurtenance of the duties of a popularly elected state official, 3 where he is elected by the state legislature, 2 where he is appointed by officers other than the governor, 4 where he is appointed by the governor, 3 where he is appointed by the governor subject to confirmation by the executive council, and 21 where he is appointed by the governor subject to confirmation by the state senate.

His preference is for appointment by the governor. This, of course, concentrates responsibility upon that official, and concentration of responsibility appears to be a cardinal point of administrative theory. In some states this might work very well, but if local political ethics countenances the use of the appointive power by the executive to build up a personal machine, some check is needed. In business organizations the more important appointments very frequently come before the board of directors, and if there were a body well fitted to act as a state board of directors, a similar course would be indicated. The state senate is hardly the ideal board of directors. It is too big, for one thing; has too much else to do, and meets too infrequently. I think I should allege these as reasons, rather than

the political tone of the body, in which respect the senate is certainly no worse and frequently better than the governor himself.

He points out that there is in many states a lack of a power to remove. Such a power should exist coevally with the appointing power. I differ with the author as to the value of specifying that removal be "for cause." An honest executive never makes a removal save for cause; a dishonest executive is never at loss to find cause. Trying a case at the bar of public opinion is a well sounding phrase, but means little. Public opinion is asleep nine-tenths of the time, at least, and in its waking moments is more readily moved by the governor than by a subordinate.

I note with pleasure the expressed opinion that political considerations have played a less important part in selections and removals in the commissioner's office than in those of other state officers.

3. Qualifications.

The author laments that the statutes do not give greater emphasis to technical qualifications for the office. I should be somewhat at a loss to specify what the proper qualifications are and it is interesting to note his views. The ideal qualification, he indicates, would be experience as an insurance agent; the next best, experience as a company executive. Both these classes undoubtedly contain men of high ability who would make excellent commissioners, but I think it may be doubted if experience in either capacity is *per se* an adequate qualification. True, in both cases, they would start out with some knowledge of the subject, but in neither case would their experience cover more than a part of the field, and in most cases a decidedly narrow part. There is nothing in the training peculiar to either branch that tends particularly toward the development of judicial temperament, the quality the commissioner needs above every other. No person indeed is less judicial than a good insurance agent. He is essentially a salesman and a partisan. And it must be added that no insurance agent and no company executive could be selected who would not start out with the grave handicap of being viewed with acute suspicion by a good part of the interests subject to his control. It is well in this respect that the commissioner have not a too intimate previous connection with the insurance business;

also in this other respect, that he is better able to approach the problems of the office *de novo* and without preconceived opinion and prejudice.

Most of the qualifications which I should list for the office do not admit of being specified in the statutes. I have spoken of judicial temperament. To this I might add tact, common sense, a sense of humor, some knowledge of the state government to enable him to deal with the legislature, the governor, the fiscal officers, the civil service commission, the attorney general, the courts, with all of which he is brought in frequent contact. He should be a person of good intelligence, but not necessarily a technician. Knowledge of law, of the rules of evidence and of statutory interpretations will serve him on the whole better than knowledge of actuarial science and statistics. Probity of character is, of course, an essential. On the whole, I reach a conclusion entirely opposite to the author, feeling that the governor or other appointing power should not be constrained by any list of statutory qualifications—certainly not by those suggested by the author.

4. Other Duties.

There can be little question that the commissioner's office can hardly maintain a genuine professional standard so long as it is treated as an adjunct to another office, or so long as it is loaded up with other functions. The commissioner should, if possible, develop into a specialist, and the insurance business is quite sufficient to require his full attention. In all states this is unfortunately not possible.

5. Term.

I share the author's preference for a term of substantial length. He suggests a four-year term coupled with a tradition for reappointment as reward for faithful service. Security of tenure and opportunity to gain experience are essential not only to secure services of high quality, but to permit the development of efficiency.

6. Compensation.

There is no disagreement on the point that the compensation of commissioners by and large is incommensurate with the importance of the office.

7. Subordinates and cost of service.

The author gives no little space to the matter of subordinates

and his comment on the value of their services is most just. I do not go with him to the full extent in admiration for the civil service laws. They are one degree better than a political spoils system, and that is about all. I think I should prefer to have deputies, actuary and examiners outside the civil service; for the reason that all of these are called on to discharge functions highly confidential in nature; and whatever be the merit of the civil service process, it is no certificate of character. I quite agree that statutory specification of salaries is a grave error. Salaries should be subject to administrative adjustment, with some very real power in the commissioner's hands: as much as is consistent with the observance of budgeting limitations and the maintenance by the state of a consistent policy as to salaries in the several administrative offices. The commissioner should have real powers also as to appointments and removals, and it should be possible to initiate a policy of promotion upward from the ranks.

I agree heartily in his comment on the inadequacy of departmental salaries: also as to the grave evils in the appointment of unofficial examiners.

8. The concluding statement "that the record of the insurance departments compares favorably with that of any other branch of the state administration" is most appreciatively received by one who has been in the service.

B. Scope of Control by Administration.

1. Formation of New Companies.

The commissioner is very generally entrusted with a part or with all of the official motions incidental to the formation of a new insurance corporation. The merits of this as a control measure I think more putative than real. If the company complies with the statutory requirements, he has ordinarily no option but to approve. He may, of course, despite the compliance with the statute, detect reasons for watching it thereafter somewhat carefully; but he should do this with all new insurance corporations as a matter of course. Its chief merit lies in convenience. The incorporation of insurance companies usually is enough different from the incorporation of business corporations, and occurs with such relative infrequency that the passing on the papers makes an awkward break in the routine of an

office handling the papers of business corporations; and the insurance commissioner is usually more familiar with the details and can do the work better. The extent of his functions differs in the various states. I am more familiar with a procedure where the commissioner examines the articles of incorporation and the bylaws and certifies his approval to the secretary of state who issues the charter as a matter of course. One point brought out by the author deserves attention, namely, that the incorporation laws are not always clear upon so vital a point as when the corporation becomes a legal entity. There are other points on which the laws leave much to be desired, especially the question, sometimes a very grave one, as to whether the general corporation laws have any application. Undoubtedly, most of the laws relating to insurance corporations might to advantage be carefully revised.

I differ with his approval of the provision in some states which makes the granting of the charter and the authority to begin business simultaneous. If the latter step is to any degree discretionary, the commissioner can take it more intelligently if the corporation has not only issued its stock and acquired the requisite capital and surplus, but has also retained its staff and purchased the necessary equipment.

The author's discussion of the commissioner's discretion, and of his investigation of newly organized companies, I see no reason to question.

His criticism of the very broad powers which some laws give the commissioner with respect to sales of insurance stock is not without force. I am no particular admirer of the Blue Sky Laws. There have been some very obnoxious incidents in connection with insurance stock sales, which may be reason for regulating them: but the regulation should at least indicate what may or may not be done, and not leave the matter subject entirely to the commissioner's good will and pleasure. His comment on the approval of corporate names touches on a most important matter. The fraudulent practice of picking a corporate name very similar to that of a successful corporation is unfortunately very common in insurance, and requires to be more rigorously checked than it is at present.

2. Licensing of companies.

The author points out a very interesting distinction between

licenses for revenue purposes, licenses for registration and licenses for regulatory purposes, indicating that the difference may have an important bearing on the legal phases incident to receiving a license, failing to receive a license or doing business without a license. The law should, of course, make clear and definite the legal status incidental to the licensing process.

As to the licensing power, he makes two main criticisms:—first, that the laws do not make sufficiently definite the commissioner's duty to pass upon certain facts before he issues a license; second, that the power to refuse or to revoke a license is so broadly and generally phrased as to confer practically an unlimited discretionary power.

On the first point it may be stated that he is quite correct. The public does place a certain reliance upon the fact that the commissioner has licensed a company, and should be entitled to assume that he has satisfied himself that it is a sound and solvent concern. Unfortunately this assumption is not always justified by the facts. Even some of the best insurance departments have been guilty of licensing companies which they should have known were in decidedly shaky condition. Whether this be due to a very human tendency to go easy on a company that is out of luck, to desire to avoid as long as possible precipitating a day of reckoning, or to any other reason, the practice is all wrong. The license of the insurance department should import the impartial and unwavering application of a strict standard, and a thorough investigation of the essential facts; otherwise it cannot long command public confidence.

On the second point, the merits are less clear. It is no easy matter to specify and carefully define all the possible reasons which would warrant the refusal, revocation or suspension of a license. In making the law too specific, much of the efficacy of the power as a police measure might disappear. On the other hand, leaving this power wide open paves the way for a notable abuse. I have known of cases where the licensing power has been used to compel a company to do what no law and no statute required, and even to compel a company to refrain from doing acts which the law very definitely indicated it might do. This is the exercise of a power distinctly legislative, and it is certainly a strange and anomalous spectacle to see a state official arrogate to himself the right not only to add to what the legislature has

done, but to nullify what the legislature has expressly declared as law. This is, to be sure, an extreme case, and a precedent which most commissioners would hesitate to follow, but it does indicate the possibilities which lurk in a wide-open discretion.

How broad, then, should the statute be? Broad enough, certainly, to warrant a refusal or a revocation in case of financial weakness. This power should extend beyond statutory tests of insolvency, for a company may be technically solvent and still headed straight for financial disaster. Broad enough, certainly, to cover failure to comply with a statutory duty or requirement or violation of a statutory prohibition. So far as these causes go, I would impose no restriction save the duty of accompanying either the refusal or the revocation with a bill of particulars, leaving the party to his remedy in the courts. The chance of an abuse of discretion in these respects is slight. Refusals of license or revocations entail serious consequences to representatives of the company in the commissioner's own state, and unless based on good cause create delicate diplomatic situations with the state of domicile of the company concerned. Failure to perform contract obligations I do not think ought to be a ground of revocation. On this point I think I prefer the Massachusetts provision empowering the commissioner to make report to the legislature. This gives him enough authority to investigate claims without leaving open the door to compel a company to forego its legal right to a day in court. Even so much power might properly be restricted to the extent of forbidding its use as a means of discovery of the company's case by a claimant. A failure to pay judgment debts might rank as a lack of financial stability.

The power as above outlined remains broad, and permits revocation for trivial causes. It seems preferable, however, in this to refer to the commissioner's discretion than to follow the author's suggestion and encumber the statute books with a list of specific instances which may be accepted as good and sufficient causes, leaving a vague undefined norm still open.

3. Licensing of Agents and Company Employees.

The author makes the distinction here as in the former case between licenses for revenue, licenses for registration and licenses for regulation. As before, the character of the license may affect the legal concomitants.

The author notes that an agent's license carries with it no specific indication of the agent's authority. I am not certain that this is universally true. There has been a recent case in Massachusetts on this point which I have not been able to refer to, but my recollection is that the court took quite a different view. I think, however, the author and myself are not in conflict as to what should be the consequence of issuing a license: namely, that by naming an agent for a license the company should vest him with a certain definite implied authority. Filing the power of attorney with the department creates only technical notice of a limitation of authority, and is no real protection to the assured. I doubt if it is practicable to create different grades of agents with differing implied powers. In order to avoid serious hardship to the public, the measure of authority of an agent licensed by the state should be definite and uniform, and so specified by the statute. It is proper to state, however, that I recall no serious case of hardship to any policyholder through limitation of the agent's authority. One common limitation in agency powers was limitation of the power to cancel, brought about by the sapient practice of agents in shifting companies to cancel off all business on their books in the old company and rewrite it in the new. Some inhibition of practices of this nature might properly be made.

It is true, of course, that the mechanics of issuing licenses, and the qualifications set forth in the statutes vary very widely. It is no longer true, as stated, that no departments make examinations for agents' licenses. Massachusetts and Pennsylvania have both recently established such a system. This system has been strongly objected to by life companies issuing industrial licenses, where the agent is primarily a collector of weekly premiums, and where the delay incidental to the examination is practically a serious matter.

The author suggests an abandonment of the annual licensing of agents. Unfortunately, the agent's license is still an important source of revenue, and for this reason an abandonment of the system is not likely. It is quite possible, however, to extract the fee without going through the labor of issuing the license, and the suggestion has no little merit.

The power to refuse a license is broadly discretionary, and the grounds for refusal very broadly stated. The author suggests

inserting more definite standards. I fear this could not be done without crippling efficacy of control. Practically, the agent has little to fear. The commissioner has enough difficulty as it is in making and enforcing entirely reasonable limitations, and a refusal to license an agent may bring a more serious political storm on his head than refusal to license a company: for the agent has a vote and the company has none.

The comments on revocation of licenses convey the distinct impression that the revocation incidental to revocation of a company's license is an outrage because of the implied stain on the agent's character. Some offices do keep an "unsuitable" list, or if the author likes the term, a "blacklist": but the process is not mechanical or unintelligent. I do not vouch for all offices, but the one with which I was formerly connected had no difficulty in distinguishing between a revocation for cause and a revocation collateral to a company revocation.

I think the author's comments on revocations for failure to pay over collected premiums overlook the fact that under the statutes such a failure is no mere civil transaction but breach of a fiduciary relationship. It is not, therefore, a mere matter of debt.

Going on to the licensing of company employees, I quite concur in the thought that the multiplication of licensed classes may come to be very badly overdone. I note in the comments on "adjuster's" licenses a failure to appreciate that in one of the laws he cites the adjuster is not a company employee, but one who makes adjustments for the assured.

4. Licensing of brokers.

The practice of licensing brokers, it is pointed out, is somewhat more exacting than in the case of agents, the power to refuse a license generally a little more broadly stated.

The laws relating to insurance brokers have some peculiarities due in part to the character of the position. The broker represents the assured, officially at least. He is not officially a company representative; though, as a matter of fact, he does business so habitually with companies that his reliability is subject to quite as severe a test as the reliability of an agent. There are certain peculiarities about his legal rights and duties, some of which relate back to the old days of marine underwriting wherein

the broker played a very important role. In part, the laws reflect certain difficulties due to companies attempting to use the broker's license as a means for dodging the residence qualification for agents: and to the activities of the big brokerage firms doing business all over the United States.

5. Licensing of "Excess Line" Brokers or Agents.

The author notes that licenses of this class are matters practically of pure discretion, the licensee doing business essentially on sufferance. To this unbounded discretion he makes his usual objection.

The "excess line" broker places business in unauthorized companies. This is necessary in certain lines, where the resources of admitted companies are not sufficient to cover large unit risks: very convenient in others, where non-admitted companies can write more comprehensive policies than admitted companies are allowed to. The "excess line" broker is supposed to place only such lines as the statute allows and within the statutory restrictions. The departments are, however, in no position to keep track of his activities, and he might very readily extend his authority far beyond its proper limits. This is perhaps the reason for keeping him under a very severe type of control: though as a matter of fact he commonly does not find this a particularly serious matter: and perhaps for the good of the business the theoretical abuse which might be made of the commissioner's power might be suffered to stand.

6. Assets, Investments and Financial Operations.

The author's treatment of this subject is rather crude. The purported analysis of the elements of financial soundness on P. 193 lists only reserve liabilities against outstanding policies, investments and expenses: a category certainly not exhaustive. After reading this section, I remain uncertain whether he has grasped the difference between policy reserves and loss reserves. Certainly, he speaks of the statutory loss reserves of casualty companies in language that seems more appropriate to the unearned premium reserve. This is, however, matter of detail. Financial soundness is certainly a function of many other things besides those enumerated.

(a) Computation of Reserves. The comments on the computation of the reserve of life companies appear intended to

indicate that these laws set up no fixed rule; but leave a discretion in the commissioner. The Massachusetts ruling on preliminary term policies is a true instance of administrative interpretation, which proves his case as to that state. Elsewhere a different result appears to have obtained; and the ruling in question has since been reversed. But it may fairly be stated, that while with respect to the ordinary types of life policies little, if any, latitude exists, new and variant types of contract have created more than one debatable ground. Massachusetts and New York have added to their reserve laws very materially to care for the newer types of life insurance contracts, and some of the states which have not done so probably value life contracts not entirely by the strict letter of their law. There may be some room for discretion in the valuation law. Its exercise is commonly not productive of difficulty.

The comment on the unique equipment of certain of the states for performing valuations is probably just. It may be observed that since Massachusetts ceased to value the policies of out-of-state companies, the practice of receiving certificates of valuation is pretty general. And it ought to be. A state should, however, value the policies of its domestic companies and do so with extreme care. A company's own valuations should be received, if at all, with much caution.

The comment on the valuation of the policies of casualty and surety companies strikes one as a misconception. The problem here does not relate as he indicates, to the lack of a standard classification of risks, nor to the lack of a basic table of expectancy of liability on such policies. The problem as to these companies is setting up a satisfactory and adequate liability to cover accrued losses. Part of the problem lies in setting up a reserve to cover losses accrued but not reported. This is necessarily a matter of estimate: but the accuracy of a company's estimate may be checked by requiring reports on the developments and comparing these figures with the original estimates. The New York Department does this from time to time with salutary results.

The major problem however, lies in the reserves for liability and compensation losses, and in the loss reserves on surety business. Here known losses remain undetermined sometimes for long periods. The legislatures have set up highly empirical

statutory loss reserves for both liability and compensation, and the law provides for discretionary power to set up additional reserves if necessary. At times this power has been used. The statutory formula for compensation loss reserves proved seriously defective, setting up in years of bad experience reserves probably inadequate. On the other hand, the formula for liability loss reserves sets up reserves claimed to be far more than adequate. Actuaries are now working on the problem of new formulas. As to surety loss reserves, a different problem exists. Surety losses are frequently for very large amounts. The maximum loss is the penal sum of the bond, sometimes subject to increase by statutory penalties. The claims are frequently involved in litigation, with collateral questions of subrogation, recovery of indemnity from the principal and other salvage, or the surety may undertake to carry out the obligation of the principal. Hence the loss reserves admit of considerable scope for the imagination: and while insurance companies as a rule are disposed to set up reserves clearly adequate, this tendency is less evident in surety companies for the reason that they frequently assume large single risks and their maximum retention on a single risk is limited to 10% of their capital and surplus. An empirical test is used here also, checking the adequacy of original estimates with the actual results. I doubt if the statement of the author that computation of reserve liabilities is "a placid, routine task" is true so far as these loss reserves go. Computation of the reserves of life companies or of the unearned premium reserves is more of a routine matter.

(b) Valuation of Assets. The comments on valuing assets and in particular of securities are on the whole correct. The note on page 203 might perhaps be brought up to a date later than 1919. The commissioner in valuing securities has a certain discretion which the author points out was in the extraordinary emergency of war time conditions rather generously used. Since that emergency the tendency has been to revert to the normal method. The Burlington rule to which he makes reference has now been discarded.

There are two classes of investment where the commissioner has a real discretion to exercise; namely, in valuing investments in real estate and in determining the security for mortgage loans. Some of the investment laws are, besides, rather carefully and

specifically limited, and the exact enforcement of these limitations might take the commissioner very far afield, canvassing the financial structure and condition of railroads, and the property valuation and outstanding indebtedness of municipalities. Ordinarily, this is not done.

One might note that in view of pending litigation the statement that security valuations are not undertaken for the purpose of fixing premium rates may possibly have to be recast. Both Missouri and Kansas have undertaken to include the investment profit as an element in rate making.

(c) Approval of Investments. There can be no manner of doubt that certain investment laws empower the commissioner to wield wide and unrestricted powers of approval or disapproval as to security investments. One is inclined to agree that so important a matter should be of statutory rule rather than of discretion.

I agree also in his criticism of the indefinite meaning of the power to hold real estate. Commonly this is limited to such as is requisite for its convenient accommodation in the transaction of its business. This means much or little according to the interpretation. The author has given one instance of a very broad interpretation. I have known the statute to be so narrowly construed as to prevent any requirement of real estate to meet future needs reasonably to be anticipated; a most unwise and burdensome limitation.

The comment as to the time limit on the holding of real estate not needed for company purposes is peculiar in one respect. The law commonly gives the commissioner authority to extend the statutory time limit if the interests of the company would suffer materially by a forced sale. The author decries the emphasis on "the interests of the company" on the ground that the interests of the policyholder may possibly be antagonistic. I am bound to say I do not see how this is possible. There are, of course, plenty of cases where such antagonism may exist, but in a matter of conservation of assets, it is hard to see how the company's interests and the policyholder's interests are not one and the same.

(d) Regulation of Expenses and Dividends. The author has in mind, on the matter of expenses, the statutes relating to

life companies. The object of the statutes is, as he states, so far as applicable to mutual life companies, to secure financial soundness and also a fair rate of premium return. As applied to a stock company, only the first condition is involved, and there is, besides, a certain indication of an intent to prevent a type of competition which might prove wasteful. It might be added that in certain of the casualty lines, an attempt has been made by the New York department to limit acquisition cost, not only as to amount, but as to the mode of subdivision between different types of agents and different parts of the field organization; also an attempt to limit the number of agents paid the higher scales of commission. This attempt is built upon a rather slender statutory basis. It has, however, been rather generally acceded to, not, however, without some vigorous protests. The merits of the proposal are not assailed. It is inevitable that such a procedure must have a notable effect on competitive practices, and from the administrative standpoint, the action looks very much like departmental legislation.

Control over dividends of mutual companies is effectuated in several ways—(1) by a statutory limit as to the surplus. A number of states have laws as to the surplus accumulations of life companies. Massachusetts has one relative to surplus accumulations of mutual companies other than life, though in this case the limit is put fairly high. (2) By statutory rules as to distribution of surplus. Certain of the statutes relating to life companies indicate that the dividends on each class of policy must bear a relation to the contribution of that class of policy to surplus. As to companies other than life, it is more usual to provide for a uniformity of dividends to all policies of the same class within the state. (3) Statutes of the type which the author refers to, requiring administrative approval of dividends. The object of the last type of statute is partly to prevent the dividend power being utilized inequitably, partly to prevent its use for competitive purposes so as to nullify rate regulatory laws, partly to prevent a mutual company bidding for business by paying large dividends to the prejudice of its financial condition.

On the whole, the author is right in stating that a majority of the states do not confer on the commissioner power over expenses and dividends as such. It is, however, a field in which statutory

extensions are not unlikely, and extensions may be furthered by a use of the licensing power, and indirectly by use of the power over rates.

(e) **Compelling Domestic Companies to Make Good Impaired Capital.** The powers of the commissioner in the event of an impairment of capital stock are fairly stated. The comment, however, on P. 212 as to mutual companies seems faulty. There cannot be an impaired capital stock of a strictly mutual company in the event that such company has no capital, but the organization of mutual companies with a guaranty capital is by no means unknown. The statement that there are no fixed amounts of reserve liability of mutual companies appears incorrect. The repairing of a deficiency is not uncommonly exercised by requiring the directors to levy an assessment on policyholders except, of course, in case the company issues only non-assessable policies. In that event there are cases where a company has avoided liquidation by raising a loan with such provisions as to its repayment and the rights of the note holders as would effectively defer them to the other creditors of the company. While an impaired mutual frequently does go into liquidation, there are cases where individuals have a direct interest in keeping it alive, so that it is by no means certain that the amount necessary to make good the impairment will not be raised.

(f) **Approval of Consolidation or Reinsurance.** Approvals of reinsurance are frequently inserted in the laws to prevent the defrauding of policyholders. Some of the statutes requiring approval of the reinsurance of individual risks appear, however, to be intended to prevent reinsurance in unauthorized insurers. The modern tendency has been to give wider scope to reinsurance, confining the requirement of approval to cases of reinsurance of substantially all a company's business. Consolidations and mergers very commonly require approval by the commissioner. In both cases the power of the commissioner is very broad. Doubtless it has to be. Conditions under which reinsurance of all of a company's business, or under which consolidations and mergers are effected may relate to emergencies, and are sufficiently infrequent so as to make too elaborate provisions unnecessary as well as unwise. It may be mentioned that both devices have been occasionally the vehicle of gross frauds.

(g) Approval of Increase or Reduction of Capital Stock. There is one reason for giving the commissioner authority in the premises which the author does not apparently have in mind, namely, that insurance laws usually require insurance stock to be paid for in full, and that the amount of paid-in capital stock determines the company's authority to write certain lines of business. The language of the Massachusetts statute to which he objects so violently was very evidently drawn with these collateral provisions in mind. Obviously until the company has paid-in stock to the requisite amount, its right to do business is not clear, and the commissioner could hardly issue his certificate to that effect till the stock had been actually issued and paid for. I disagree with the criticism of this law more than with his conclusion that many statutes giving an apparent power of discretion to the commissioner are unnecessarily vague. It may be added, in the case of the Massachusetts statute, that any difficulty was surmounted by the very simple device of going over the matter tentatively with the commissioner in advance, thus avoiding a future conflict with the department after the stock was issued and outstanding.

7. Deposits of Securities by Insurance Companies.

This section is a most valuable analysis of the depository laws. These laws are so thoroughly imbedded in the insurance law, that their utility and effectiveness are usually taken for granted. The requiring of deposits does militate against companies operating on a shoestring basis, and does bring within the state of deposit certain definite assets which may be made available for the benefit of creditors. It is, however, well to note the counter side, that the protection afforded the policyholder is to a degree illusory, and that the laws are unquestionably a handicap on American insurers going into foreign states. The deposit is indeed somewhat of a nuisance to all concerned. It necessitates rather elaborate provisions as to depository; the amount of deposit; the kinds of security which may be deposited; the disposition of interest; changes in securities; withdrawal of the deposit, and methods for making the funds available to those for whose benefit they are deposited. There is some variety in the statutes on these points, not infrequently obscurity; and the functions of the commissioner occasionally involved in doubt.

On top of all this, the fund, while officially a trust, is an anomalous sort of trust, the class of beneficiaries being entirely indefinite, and a certain reversionary right none too clearly defined existing in the company making the deposit. The rights of parties and the remedies are therefore involved in no little doubt. Of more serious moment are the facts that the funds are in the hands of a custodian, whose liabilities are probably not those of a trustee, and whose official bond is hardly adequate to guard against a breach of trust. The state's responsibility for the safe-keeping of the deposit is seldom so explicitly assumed as to create a real right of action in favor of an interested party.

All this does but little justice to the detailed and careful study. I am inclined to agree with the author's conclusion that the commissioner ought not to be the depository. These funds, like all state funds, should be handled by the financial officers of the state, and I think I would add, the state should be very definitely responsible for their safe-keeping. My inclination would be to replace deposits where possible by surety bonds.

8. Policy forms.

There is a certain field of legislation which the author has not gone into, namely, certain specific statutes regulating particular details of policy forms. The author is more concerned with the statutes which attack the question of policy forms more directly and extensively. I think he might have gone one step further as to the part played by insurance companies in the matter of state regulation. The more responsible companies have not only not opposed, but have been much in favor of standardized policy forms, and for the very good reason that it freed them at once from a vicious type of competition, and from the discredit attaching to the whole business on account of unfair and worthless types of policy. There is a side of the matter, too, which concerns the question of rates. Standard rates and a sound actuarial method of computing them are hardly possible except with reference to standard policy forms.

The author distinguishes three types of regulation (1) Legislative prescription of the exact wording of the policy. (2) Administrative prescription of the exact wording of the policy. (3) Legislative prescription of typical provisions or standards to be administered by a single official having approval, dis-

approval and dispensary powers. The first type is exemplified by laws like the Massachusetts standard fire policy.

I am inclined to think that the author overstates the advantages and understates the disadvantages. It is true that the statute book gives the insured the exact wording of the policy, but this applies only to the basic framework, and the power given to vary the form by riders may result in the policy he receives being very different from the standard form; in which case the statute may prove a pitfall to the unwary. The argument that the statute will increase the probability that the insured will conform to its terms, seems decidedly thin. He is quite right, however, that it leaves no discretion to the commissioner. This has the concomitant disadvantage that the statute is rigid and very difficult of amendment. Statutes of this type have been a potent obstacle to the development of a uniform standard policy.

The disadvantage listed, that it is too rigid to be readily adaptable to special or non-standard risks is genuine enough. One might add that the wording of the statutory forms has provoked a perfect torrent of litigation.

The second type comprehends a series of statutes dealing mainly with fire policies authorizing the commissioners to prepare and file a standard form. The greater part of these have been declared unconstitutional, a fact which the author seems to lament; although possibly, I draw a wrong inference from his criticism of the reasons given by the courts. There is no doubt that the administrative method is more flexible at least in theory. It might be, however, a very serious matter in the hands of a commissioner with peculiar and personal views as to policy writing. The New York statute, however, seems to have worked well enough up to date.

I think it may fairly be assumed as the author indicates that some commissioners have undertaken to prescribe policy forms or to require modifications thereof without any express statutory authority.

The third type is the one commonly used in life, health and accident insurance, and we might add, in workmen's compensation. The general mechanism is a provision requiring the filing of forms, a provision setting forth certain standards to which the policy must conform, provisions as to printing, size of type used, etc., and provisions conferring on the commissioner

a power of approval or of disapproval. There are usually provisions for making the commissioner's ruling effective, either direct or indirect.

This type of law has worked fairly well. It has enabled companies to evolve standard types of policy which may be generally used—a great advantage from the standpoint of economy. The commissioner's authority has not always been carefully defined. I prefer the Massachusetts theory that the commissioner must stick closely to the letter and spirit of the law to the New York theory that he may use a broad discretion, and in effect make his own law as to details not specifically prescribed. The author is probably right that the entire matter of state control over insurance contracts was inevitable, and at present lags behind the demand.

9. Rates and Premiums.

The authority of the state over the rates and premiums of insurance companies has taken three different statutory forms:—the anti-compact laws, the anti-discrimination laws and the rate regulatory laws proper. One can trace a regular evolution from the purely anti-discriminatory law to the rating law, which however is not merely prohibitory but affirmative, and undertakes to deal with rates directly, whether by way of approval or disapproval, or by way of rate determination.

There are two main lines of rating laws—those applicable to fire ratings and those applicable to workmen's compensation ratings. This latter branch of insurance involves enough premium so that it is hardly properly described as a "minor" line of insurance.

I do not disagree markedly with the author in his views. I think he would have done well not to have confined himself to the fire laws. I think he tends to confuse anti-discrimination provisions and provisions authorizing companies to make variations from manual rates, with provisions looking to direct control over rates. Having discussed this whole matter in a lengthy paper before the Society, I hardly feel warranted in doing so again. I would, however, emphasize two points:—

(a) The power of the state, and consequently, the power it can vest in the commissioner over rates is subject to two constitutional limitations. There must be due process of law.

The author seems to think that this means notice and hearing. It goes somewhat further than this:—it means a day in court, and a process whereby the companies affected can contest the commissioner's or the state's determination both on the law and on the facts.¹

Outside of this, there is the substantive limitation that the rates as determined by the state must not be confiscatory. What this imports is not entirely clear. It seems probable that the rates of insurance carriers differ sufficiently from those of public utilities to make the decisions as to the latter class not entirely applicable. The underwriter is entitled to a reasonable profit. Whether this be on his investment or, as is the common rating practice, a profit set as a percentage of premium income, remains to be seen. There has been much litigation in Missouri and Kansas touching on this point since this book was prepared, and the Supreme Court has yet to be heard from on the subject.

(b) I think the author fails to do justice to the consideration that in rate making, two distinct problems are involved. Rates made for an entire branch of insurance such as fire or workmen's compensation consist in detail of a series of basic rates made up for the several manual classifications of risks, and these basic rates are modified for application to a specific risk by schedule rating plans and (in workmen's compensation) by experience rating plans. The first essential is that the rates and the rating plans shall be relatively just, that is, that the rate as finally applied to a risk shall be properly proportioned to the hazard involved. The problem here is essentially one of discrimination. The second essential is that the rates as a whole shall be adequate and reasonable. This problem is the real rate making problem and involves the determination of an average rate level. This average rate level is the general basis for fixing the classification rates. In workmen's compensation, it is usual to test out a rate computation by applying the manual rates to the payrolls of the experience period and seeing how nearly they come to yielding an amount available to pay losses which corresponds to the actual losses for that period. The fire rating process is some-

1. *Ohio Valley Water Co. v. Ben Avon Borough*, 253 U. S. 287.

Opinion of Justices, Massachusetts Supreme Judicial Court, April 16, 1925.

what less refined, but the general result of the process contemplated by the laws is to lump the accrued losses and expenses for the five latest calendar years and compare this with the earned premium income. If the result shows that the companies have made more than 5 per cent profit plus a 3 per cent catastrophe margin, the rates are reduced accordingly, the amount of the reduction being expressed as a flat percentage reduction. But most laws contain provisions contemplating that this reduction need not necessarily be applied flat. The companies or their rating organizations may distribute it equitably, with or without the approval of the commissioner. I doubt, therefore, if he is entirely correct in his reference to the preference shown by the commissioners for flat rate reductions or the preference of the companies for flat rate increases. Such might be made from time to time, but I think that commissioners in the west and south are not, to use the author's phraseology, such ambitious and earnest politicians as to be oblivious to reason, and to be moved solely by guesswork, emotionalism, and an appreciation of dramatic values.

The author is quite right on the point that inadequate rates are a greater menace than excessive rates. The fire laws commonly stress reasonableness more than adequacy. In compensation laws the contrary is true. But in neither fire nor compensation insurance does there appear any margin comparable to what exists in life rates.

10. Payment of Private Contract Claims.

The author's comments on this ticklish branch of jurisdiction are interesting and I accord with them so entirely that I make no other comment than this. Ordinarily there is little trouble about insurance claim settlements. There are many cases, however, where the refusal to pay a claim rests on an interpretation of the policy, and the assured is by no means content with the company's rules. There are sporadic cases where the company's adjusters are harsh in their dealings, and even overstep the line of legitimate dealing. The department can hardly refuse to take some cognizance of private claims and can if it acts wisely effect a great deal of good. On the other hand, it can very easily pass from this to a procedure which in effect ousts the companies of their right to try their cases in court. This is

a policy distinctly questionable. It is nearly as questionable to use the power to investigate for the purpose of revealing to the assured the evidence on which the company proposes to rely as a defense. It may be agreed that the essential function of the office is not that of a claim adjustment bureau and that the adjustment of claims should be made with due recognition of the right of companies to carry cases involving a bona fide defense to a proper tribunal.

11. Business Getting Methods.

This deals with the anti-discrimination and anti-rebating law, with misrepresentation and "twisting," with advertisements and circulars, and with miscellaneous provisions. The comments on each heading are suitable and timely. I think the tendency has been for commissioners to interpret the anti-discrimination and anti-rebating laws more strictly than the courts would have sanctioned. In the statutes relating to public service corporations, the courts have shown a decided tendency to read into kindred provisions a rule of reason. Most timely perhaps is the caution that in tackling the great subject of business-getting methods, the legislatures are opening up a field involving a vast detail and the investigation of many transactions purely oral; so large and obscure a field indeed that no department has a force sufficient to come anywhere near enforcing the laws.

C. Inquisitorial and Visitorial Powers.

1. The Annual Report.

The author is quite right in pointing out that the annual report has its limitations. Nevertheless, the good faith of the makers is not the only security for its accuracy. The report is detailed enough, so that an expert, especially if he compares it with preceding reports, can form a pretty shrewd estimate as to its general accuracy. Thus in the outstanding case of recent years, where a large company falsified its annual statement, the fact that the company was "faking" was pretty well known a full year before the denouncement. Annual statements are canvassed not only by departments but by competitors, and by those with whom the company has business dealings; and the street is seldom taken by surprise when an insurance crash occurs. This and the periodical examination are potent safeguards against any far-reaching falsification of statements.

The author is quite right in pointing out the need of a fairly uniform filing date and discretion in the commissioner to extend the time of filing when necessary.

As to the contents of reports, my own feeling is that statutory enumeration of details is a mistake. They are a great hindrance to securing a uniform type of report, and do not admit of being varied to meet changed conditions or new developments in the science of accounting. The commissioner should be, as under some laws he is, given a good deal of latitude.

2. Examinations.

The author points out very well the importance of this power and its liability to abuse. Grave abuses of the power have been made in the past, but these seem less frequent today. Nevertheless the possibility still remains open. Ordinarily a commissioner is not apt to make oppressive examinations of his own companies and the possibilities of retaliatory action form an excellent check against his making too liberal a use of his powers in case of foreign companies—that is, of course, if he has domestic companies doing business in other states. One recent indication by a commissioner of desire to participate in all departmental examinations of out-of-state companies was met with so many requests to participate in his own departmental examinations, that he found it expedient to change his front very quickly. On the whole, the tendency has been to acquiesce in the policy outlined by the National Convention, that where an inter-state examination is desired, the states to participate shall be designated by a standing committee of that body.

(a) By Whom Examinations Shall Be Made. There is some justice in the author's critique of certain of the laws in that they do not clearly indicate that the commissioner has a right to delegate his authority, as is usually necessary. The point is, however, for all practical purposes, academic. He is quite right, however, in criticising the appointment of outside examiners as generally undesirable. On occasion, however, this may be necessary, for instance, in dealing with a highly complicated and difficult matter, which may go beyond the technical resources available to the insurance department. That the employment of private examiners has been attended by some very grave abuses is, however, beyond question.

Possibly he is also right in his point that delegation of powers to examine should be evidenced by a formally executed warrant, although challenges of authority are practically unknown. Still, a company official should not exhibit confidential records and securities without some evidence that the person requesting to inspect them has the right to do so.

(b) Grounds for Ordering an Examination. The author states that in all but a very few states the power to order an examination is practically uncontrolled. He agrees that it is impractical to precede it by notice and a hearing; but apparently feels a certain uneasiness over its power of abuse. I am not entirely in sympathy with his view as to the first instance cited. The examination of the practices of accident and health companies was an unusual affair, and the desire of the commissioners to deter the highly unfair practice of companies who had not been examined attempting to raid the agency forces of those who had, does not strike one as a crying abuse. The two Kentucky cases cited, especially the last are more in point. Still it is hard to see how the power can be limited and still leave it summary and effective.

(c) Periodical Examinations. The author's conclusion as to the protection of the public by departmental examinations is by no means incorrect. There is, however, a situation in several states where there is one company so much bigger than any other company in the state that the requirement of a periodical examination creates a recurring situation of some difficulty. Take the case of Wisconsin with the Northwestern Mutual Life, or of Vermont with the National Life. It is impossible for the state to maintain a regular examining force adequate to handle such examinations. The problem is, however, met, and with satisfaction to all concerned. In Wisconsin the commissioner regularly asks for the participation of other states in which the company does business. I do not speak with entire confidence of Vermont, but my recollection is that the examination is made by a firm of consulting actuaries. There are, however, certain states where the problem of examining certain large companies is not adequately met; and one recent occurrence indicates that it is by no means safe to conclude that large companies do not get into difficulties. There is no better advertisement of the safety

of the companies of a particular state than the fact that the state performs the function of examination regularly and thoroughly.

(d) Scope of Examination. This is usually broad, and ought to be something more than a canvass of assets and liabilities.

(e) Subject-matter of Examination; Who and What May Be Examined. The author very properly omits a detailed account of examination processes. He may be right as to the imperfection of the laws in detailing all the important matters which should be examined, but the imperfection of the laws does not prevent all examinations from covering the same ground, and all that is really important.

The matter of checking mortgage loans mentioned by the author is of some consequence. Some mortgage loans are of considerable size, and the question as to whether the loan is properly secured is of some consequence in fixing the value of the loan as an asset. Real estate held on foreclosure proceedings should, of course, be canvassed; and it is desirable to test the company's practice as to its smaller loans by some sort of check test.

Examinations under oath probably fill a larger space in the statutes than their actual use warrants.

(f) Expenses of Examination. The comments under this heading are most excellent.

(g) Penalty for Refusal to Submit to Examination. The chief and most effective penalty is revocation or suspension of license. Criminal penalties are carefully provided, but refusal to submit to examination is almost unheard of. The information that statutes in a few states give the commissioner power to impose sentences of fine or imprisonment is new to me, and I should hope that the precedent would not be copied widely.

(h) Publication of Report of Examinations. The statement that this is an effective weapon in the commissioner's hands is undoubtedly true. I doubt the effectiveness of statutory regulations of the form of report, and the advisability of granting as a matter of right the hearing very generally allowed as matter of practice. The right to withhold a report from publication is of some importance, and ought to exist; although it may be mentioned that too extreme an exercise of this power might operate to the injury of the public. There have been instances, too,

where a report containing criticisms of certain conditions has been withheld to allow them to be corrected, and then published too late to do the public any particular good, but raking open all the wounds in process of healing. This is a very delicate discretionary power and requires careful handling.

(i) Acceptance of Reports of Other Commissioners. There has been a tendency of late years to avoid duplicate examinations by this means. There are, of course, limits to the process. Still a commissioner hesitates very legitimately to refuse to accept another commissioner's certificate of examination unless he can assign a very definite reason. The good offices of the National Convention in promoting cooperation in the matter of joint examinations have done much to eliminate what was formerly a crying evil.

I do not altogether agree with the quotation from the ever picturesque Thomas B. Donaldson. It is a highly dangerous matter to take for granted the soundness of a big company, though undoubtedly the percentage of sound big companies is greater than the percentage of sound small companies. Soundness and bigness have a certain logical connection. Still one could quote precedents enough to show that the rule is not invariable.

D. Administrative Methods and Machinery.

1. Complaint.

The author comments upon the meagerness of statutory provisions for formal complaints. This indicates undoubtedly a procedure largely informal. The extent to which procedure should be surrounded by definite formalities is determined by very practical considerations, and one is inclined to believe that the business is on the whole fairly well satisfied with informal procedure. So long as it can be kept informal, there is a certain saving of time; also, there exists a more personal and amicable tone to proceedings. The commissioner is less the judge and more the referee and advisor. It may be pointed out that even in certain classes of court cases, the dispensing with formalities has been introduced with some success, particularly in matters of juvenile offences and family relations. Forms have their use; likewise their abuse; and the procedure should conform to

the standard which best fits the persons with whom the official is called to deal.

2. Notice of Proposed Action.

The author refers to notice and hearing as staple procedural safeguards against arbitrary or oppressive administrative actions. This is true to a degree. Still even the courts furnish instances where action to be effective must be taken summarily and *ex parte*, without either notice or hearing. The author points out very justly that it is not necessary or advisable to inject them into each and every administrative action. He countenances, for instance, the absence of notice in the matter of holding an examination, but apparently not in the matter of filing an examination report. He countenances absence of notice and hearing provisions in the laws relating to approval of policy forms. It might be said here that in certain laws of this type, notice of disapproval is practically necessary in order to make it evident that the disapproval was made within the time limit. Notices in matters of reinsurance or consolidations he passes without comment. Notices of approvals or disapprovals in rating matters have a consequence which he does not mention, namely, that in the absence of such notice companies cannot tell what rates to apply.

He does think that notice and hearing should be given in decisions on a company's financial condition; in matters of refusal of company or agents' licenses; and in matters of revocation of licenses notice and hearing before instituting judicial proceedings are mentioned but not commented upon. My own comment may be made more appropriately under the next heading.

3. Hearings.

I will not undertake to discuss the constitutional point as to the necessity of notice and hearing to satisfy the "due process" clause of the Federal Constitution, other than to indicate an opinion that the one great class of cases coming within this principle are rating cases; and that the bulk of the commissioner's other powers, in particular the licensing power, seem to be outside. As to the utility of hearings in determining controversial questions and preserving individual rights, certain points should be mentioned. In the first place a hearing before a court with definite standards of evidence and some power in the judge to

regulate counsel and witnesses is a very different thing from a hearing before an administrative officer, who ordinarily has no such standards and no such powers. To prescribe the holding of a hearing means that the officer is quite at the mercy of the parties. He can only by arbitrary refusal to listen, shut off evidence irrelevant and abusive, or abridge proceedings distinctly dilatory. In the second place, a hearing involves a large expenditure of time, and consequently, if the action to be taken must be speedy, in order to be effective, too copious provisions for a hearing are a distinct handicap. Finally, if the issues involve a wealth of detail or complicated actuarial calculations, the commissioner can arrive at the facts more readily and expeditiously by the report of an accountant or actuary in whom he has confidence, than by a hearing.

I quite agree that notice and hearing cannot be given as preliminary to an examination. I am inclined to differ on the matter of a hearing as a preliminary to filing an examination report to the extent that I believe this should be given as matter of discretion rather than as matter of right. A specific grant of the right to a hearing would permit a company if it saw fit to delay interminably the final filing of the report by the offer of evidence covering all the vast detail of the facts involved.

Hearings in rating matters concern a class of cases on a very different footing. Here one meets a class of questions involving masses of statistics and numerous actuarial processes. Some laws contain very explicit provisions for hearing; but powers to approve general increases or to order general reductions in rates are perhaps, as the author says, less generally characterized by such provisions, than the statutory processes for removing discriminations. As a matter of fact, a hearing is less valuable in these matters than it might appear at first thought. Rating hearings are not uncommonly turned into a demonstration of force, in which the facts are rather effectually beclouded by a vigorous expression of sentiment. If the commissioner is in a position to insist that the facts be tested and examined by properly qualified experts as a preliminary to a hearing, and to exclude evidence purely abusive, that is a different story. Ordinarily he cannot. In rating cases, under the principle laid down in *Ohio Valley Water Co. v. Ben Avon Borough*, cited above, due process requires an opportunity for a court review as to both law

and facts. The commissioner's findings, not being conclusive, there is less reason for explicit hearing provisions.

With respect to the author's views on refusal or revocation of license, he intimates the possibility of a constitutional question of due process because of the very common lack of hearing requirements. As above indicated, I doubt this very much. Apart from this side of the matter, to encumber this power over-much is to make it ineffective. Ordinarily, too, the hearing is not at all apt to affect the result. A commissioner seldom, if ever, resorts to either process unless he is convinced of its necessity, and the company or the agent would come to the hearing with a case prejudiced against it from the start. If a check is desired, this should be by appeal to the courts. True, the courts will not overturn a decision clearly within the discretionary rights of the commissioner without evidence of bad faith. But licensing must be more or less discretionary in order to be at all effective. To make good an appeal to the commissioner's discretion, I must say, a hearing given as a matter of grace is quite as effective a safeguard as a hearing which the commissioner gives as a pure formality required by law.

As previously intimated, the great safeguard against arbitrary action is not any procedural requirement, but the circumstance that the commissioner is a political officer. I have had four different United States Senators take a hand in the matter of the licensing of a single fraternal order, and state officials from the governor down concern themselves with the revocation of an agent's license. A commissioner does not necessarily yield to political pressure, but the possibility of such pressure being brought to bear is enough to cause him to fortify himself with sound reason for his acts, and not to insist on his technical rights in declining to hear interested parties.

4. Ground of Ruling or Decision.

The author complains of a lack of definiteness in the statutory provisions as to the evidence which the commissioner may consider in reaching a decision. What sort of a limitation he would like is not at all clear. I doubt if it would be at all advisable to hold the commissioner by too hard and fast rules.

Giving the reason for a decision is only occasionally required though, as a matter of fact, generally done. The law might

perhaps be more definite in this respect, although the practice of giving decisions without a reason is not unknown even to the courts.

The weight given prior rulings and practices is obviously, and must be, a discretionary matter.

5. Decision and Ruling; Form; Record; Publicity; Communication.

The point seems well taken that the statutes allow very loose practices in all these matters. As above stated, I do not believe that proceedings before the commissioner should be exclusively formal. In the case cited of refusing a company's license, all concerned probably prefer it be handled informally. But where a ruling or decision is required by law, it should be embodied in a definite form and recorded in the office. Publicity by publication has its use, though a somewhat limited one. Communication to the interested parties is more important.

6. Administrative Review.

I doubt if the matter of control of the acts of subordinates by the commissioner or control of the acts of the commissioner by a superior administrative tribunal are as yet very live questions. They might easily become so, however. It is unusual, to say the least, to have a subordinate decline to recognize the authority of his chief, and I never heard of a case where a commissioner refused to review the acts of a subordinate. If it be desired to put a check on the discretion of the commissioner, this is a matter more appropriate to a superior administrative tribunal than to the courts.

7. Power to Make Rules and Regulations.

The author's point that the commissioner possesses a considerable rule-making power, either expressly or more often by the necessities of the situation; that the power is not controlled by approval provisions; that there is no provision for distinguishing between individualistic rulings and general rules; nor any provision for their promulgation or publication is very well taken.

8. Administrative Enforcement.

licensing power, the power to make approvals and disapprovals
licensing power, the power to make approvals and disapprovals

and the power to make visitation and examination but a possible power to take possession of books and records. This latter power strikes me as argumentative. It certainly is very rarely called into action and more rarely meets with resistance. Sporadic instances of power to distrain for taxes, to assess costs and issue executions, to impose fines and penalties, to punish for contempt, seem anomalous and possibly unconstitutional.

Power to summon witnesses is conferred by a number of statutes, but enforcement of the statute must usually refer to the courts. The power to examine under oath exists, but is little used.

9. Judicial Enforcement.

General powers to the commissioner to apply to the courts for enforcement of his orders are somewhat rare. Statutes authorizing him to begin criminal proceedings are not numerous. Statutes authorizing the commencement of civil proceedings usually are limited to specific types of action, and contain a certain check in requiring the action to be brought by the attorney general or other officer.

The extent to which the court treats the commissioner's order or his decisions is of some consequence. The author seems to think the New York Courts have on occasion merely "rubber stamped" the commissioner's findings. I think it may fairly be doubted if this is their settled policy. It might be that the proceeding in question was a more or less friendly proceeding, the necessity of which was very clear. Certainly all liquidation cases do not proceed at such a rate of speed.

E. Control of Administrative Action.

1. Relations with the Public.

Generally speaking, the author is right in his statement that elected commissioners may be controlled by the public through the ballot box, but that ordinarily the office is too obscure to draw much public attention. There have been, however, some very warm political fights over the election of a commissioner. Ordinarily the contact of the commissioner with the public is through his publicity functions; the public records which he maintains, the reports of examinations and notices of action on licenses which he publishes, the annual report, and through his informal or casual contacts in the exercise of his office.

2. Executive Control.

The executive has in most states a power of appointment, exclusive or subject to approval, and possibly a power of removal as well. Neither he or any subordinate administrative agency has a direct power to control the commissioner's acts. He may be vested with law with specific authority as to certain acts, and the same may be true of the attorney general or other official.

The functions of the attorney general with respect to the commissioner are in some states quite extensive. I think the author quite correct in saying that, generally speaking, there is no real administrative control. On the other hand, it is rather unusual for the commissioner or any other state official, for that matter, to fail to give heed to the desires of the chief executive.

3. Legislative Control.

The author lists four methods of legislative control, (a) through control over appointments, (b) control over appropriations, (c) control over legislation as to commissioner's powers and duties, (d) impeachment.

To these he might well add the power to make investigations and also the power more commonly used than impeachment; namely, the power to abolish or reorganize the office. That is at times a very effective road out of office. Of these several heads one wishes to comment chiefly on what is said of legislation. The power of the commissioner over legislation is legally nil; practically it may be very great, provided he has the detailed knowledge of the insurance law which the legislature usually does not. Or it may be very small. His power to stave off legislation is usually greater than his power to obtain affirmative legislation; and his influence in either respect is not necessarily enough to be conclusive. The statement that he has more influence over insurance legislation than the legislature is not correct within my own experience.

4. Professional Control.

I think it may be accepted without demur that the insurance laws explicitly or by necessity require a good part of the work of the department to be done by professional experts, and that certain of the standards embodied in the law are essentially professional.

The reference to the National Convention of Insurance Commissioners and their educative influence and their work for standard forms and standard laws is well conceived. There is, however, a certain humor in picking out the Metropolitan dinner, of late years a very staid and dignified function, as the prototype of the festivities despite which the convention has done very valuable work. The note on P. 462 should be corrected. The Metropolitan dinner was for years an annual function, and I may add has not, within my recollection, been of a nature to deter the work of the convention in the slightest.

5. Judicial Review.

This is stated as the most direct and effective means of preventing the insurance commissioner from exceeding his lawful authority.

Four different types of proceeding are listed, whereby official acts, rulings or decisions of the commissioner may be attacked.

(a) Collateral Proceedings. These are actions at law between private persons as to the rights affected by the commissioner's action, the commissioner or the state not figuring as a direct party to the proceedings.

The author is of the opinion that the courts would not in such cases enter into questions of error or abuse of discretion. He thinks they might take cognizance of questions as to whether the commissioner acted within the scope of his legal authority, or as to whether the act was void because of failure to observe procedural requirements or for lack of due process of law. Apparently, however, there is a paucity of legal precedents to confirm this opinion.

(b) Enforcement Proceedings. These are proceedings brought by the commissioner either in the criminal or in the civil courts for the enforcement of the laws.

In criminal cases, it would seem that mere rulings of the commissioner or his findings as to law or fact, have no relevance to the issue. The burden is upon the commissioner to prove a violation of law, and the court will decide this question *de novo*. In cases such as prosecutions for doing business without a license, the author thinks the court would not take cognizance of the acts of the commissioner in refusing or revoking a license save possibly on jurisdictional grounds. The extent to which a license issued

by the commissioner is a defense to such a proceeding is apparently uncertain. There are cases where the court has taken cognizance of the question as to whether the license was illegally issued. These, however, refer to licenses for revenue purposes. The author thinks that licenses should not be open to collateral attack where the ground is non-compliance by the licensee with a requirement regulatory in character.

When the commissioner brings equity suits to enjoin insurers from engaging in the insurance business without complying with regulatory requirements, it would seem that his decisions are of no legal consequence. A decision that no license is required, or perhaps even a license actually issued, may not be pleaded in bar.

(c) Proceedings against the Commissioner for Recovery of Money or Chattels. These include actions on the official board or actions to gain possession of a deposit. There seems to be no ground to doubt the conclusion that the adequacy of this type of relief depends on the scope of the commissioner's liability, nor that his official decisions and rulings have no legal significance, except possibly as they may raise a question of bad faith.

(d) Actions for Specific Relief Against Official Acts. The author lists five different types of legal proceedings for review, mandamus, injunction, certiorari, prohibition and statutory appeals or reviews.

To comment on the scope of these various remedies is perhaps unnecessary. The statutory reviews are fairly numerous, but seldom resorted to. They are an anomalous type of proceedings in which the parties who may bring them, and the character of the hearing are often involved in grave doubt. Some of them, in addition, prescribe a very exiguous time limit within which the action may be brought. There can be no question as to the undesirability of all of this, and I think the author expresses the view that use of well known legal processes as methods of review is preferable to the statutory types.

6. Scope of Judicial Review.

This question, the author states, is in an amorphous condition and on this point very likely he is correct. Nevertheless, I am not entirely content with his analysis, in particular that part which deals with the review of discretionary powers. I am not at all certain that I grasp his idea, for the discussion falls some

distance short of complete lucidity. Apparently, however, the main thought is that courts ought, in view of the lack of procedural safeguards about the commissioner's official acts and the informality of his procedure, to lean to the side of thoroughness in examining his acts for the purpose of correcting abuses of discretion. I should be inclined to take a somewhat different view; for an over-liberal policy would run very easily into a policy of substituting the discretion of the judge for the discretion of the commissioner, a result not necessarily for the best by any means.

F. Conclusion.

The foregoing criticisms should not be understood as intended to deny the value of the work. It is inevitable that one who contemplates the office from the outside should differ from one who has had experience of the inner workings of the office, and it is only fair to say that the latter point of view may be subject to a certain distortion of focus. In reading over the work I have not been altogether satisfied with the analysis of statutory provisions, and have felt at times that the author was extracting conclusions from the cases cited that I should not have drawn; however, no two persons could cover the vast field comprehended by this work and arrive at the same conclusions. The author has encompassed a task of great magnitude and has indicated the existence of many points hitherto overlooked and the future development of the law may owe much to his painstaking study. I have been unable to cover the very interesting appendices, for this review has already got out of all reasonable bounds.

I do wish to indicate an opinion that the difference between my views and his rotate about the difference in point of view. The administrator's views more or less unconsciously incline towards the attitude that the less he is hampered with statutory restrictions and with other governmental checks and restraints, the more efficiently and rapidly can he work, and the better results can he produce. The lawyer quite as inevitably views all this with a certain abhorrence. He sees social salvation only in a careful and meticulous definition and delineation of every administrative power, and copious and frequent rights of appeal, either to a higher administrative body, or preferably, to the courts; and more or less unconsciously thinks first of the individual and his rights, second of the efficacy of the regulatory

process. Both points of view have their faults. The prevalence of the administrative point of view leads inevitably and directly to the bureaucratic boss and czar; the prevalence of the legalistic view to the hamstringing of efficient regulation; and neither result is desirable. At present, the governmental tendency seems towards the administrative point of view; and this produces in the lawyer the reaction towards an administrative law. It must be borne in mind, however, that the portentous growth of the administrative office has been due to two factors; first, a shortcoming in the courts as to the administration of justice; second, a shortcoming in the legislature as to the proper performance of the legislative function. The shortcoming in the courts is due to their inability to break away from a system cumbrous, dilatory and expensive. This is not entirely their fault perhaps, but the practical result is a substantive denial of justice whenever speed or cheapness are of the essence. The legislative shortcoming is due to a type of organization so ponderous and deliberate as to be incapable of handling the huge and infinitely varied mass of business which the constitution brings within its purview. The growth of the administrative arm has been by virtue of these shortcomings; a development dictated by the necessities of the case. I must own to a lack of confidence in the remedies suggested by the author. The extensive statutory tinkering he has suggested seems a task for a legislature more ideally gifted than most legislatures with which I am familiar, and one with a great deal of time on its hands; and when it is all done, it is little more than a paper safeguard.

Creating an administrative hierarchy, or affording numerous chances to run to the courts, does away with the speed, the efficacy and the cheapness which are the prime virtues of the administrative tribunal. My own reaction is that the remedy lies in a governmental remodelling, probably more extensive than is presently likely, but directed toward the end of equipping the state with an effective board of directors capable of acting as a check on the governor and the chief administrative officers; capable of relieving the legislature of some of its present load of burdensome detail. This, of necessity, involves a further straining of the rule of strict separation of governmental powers, but as the author has well pointed out, this seems in any case inevitable, and already to a notable extent an accomplished fact.

Meanwhile may we not console ourselves with the comforting reflection that we are by no means yet in desperate straits? The insurance commissioner, whatever be his potentialities, is as yet an officer generally efficient, and by and large not at all inclined to make notable usurpations of authority, nor to disregard common sense and equity. Long may he so continue.

CLARENCE W. HOBBS

Report of Committee on Disability Experience. New York. Actuarial Society of America, 1926. Pp. 48.

The great difference in the practice of the several companies and, as a result, the difficulty in classifying the companies into groups is very clearly indicated by the *Report*. The classification could be effected only by including in any particular category those companies whose methods of operation and whose policy forms were approximately the same rather than absolutely identical.

Another difficulty arose from the fact that practically each company had treated disability claims with a varying degree of liberality throughout any given lengthy period, the decided tendency having been to liberalize in approving claims as time went on.

The experience presented, therefore, must be regarded as neither exhibiting the experience under any particular policy form and method of handling claims, nor indicating what any given company may anticipate in the future, but should be regarded rather as giving some idea as to the cost of the disability benefit under different conditions. However, the small grain of available fact is very decidedly superior to a complete absence of any information at all.

One very serious disadvantage arose from the fact that the experience covered only the first few policy years. Although strong evidence of the existence of an adverse selection would suggest a relative decline in the disability rates as compared with the standard tables after a number of years from issue, there existed at the date of the *Report* no means whatever of estimating the disability experience at the longer durations.

Another serious disadvantage lies in the fact that the rate of claim by the policyholders has indubitably increased in recent

years. Moreover, an improved understanding as to the conditions which will enable the maintenance of the disability claim, is quite apparently becoming a more general item of knowledge among policyholders. Where the experience of six policy years was presented, it may be taken for granted that for the initial policy year, which covered at least six calendar years, the experience in the earlier of these six years was higher than in the later years. Consequently, as compared with the experience of the sixth policy year—the most recent, chronologically—the first policy year's experience was understated. This situation at once suggests that the maximum capacity for establishing disability claims has by no means been attained by the policyholders. The rates of disability, as exhibited by the *Report*, may not be the last word that the policyholders will have to say in the matter.

The *Report*, itself, draws attention to the difficulty of presenting figures that are dependable, and carefully warns as to the necessity for extreme care in using the rates presented as a basis for premiums. However, notwithstanding the many disturbing factors, the *Report* has proved very welcome to the many actuaries who have felt themselves to be quite in the dark as to the rate of disability now existing and likely to exist in the future among the holders of life insurance contracts.

JAMES F. LITTLE

Introduction to the Mathematics of Statistics. Robert W. Burgess. Houghton Mifflin Co., Cambridge, Mass., 1927. Pp. viii, 304.

So many college textbooks on statistics have appeared in the last few years that one is tempted to pass a new one by and say "just another". However, anyone who reads this book through will be well repaid, and will feel that the author has made a real contribution to our literature on this subject. This was perhaps to be expected, for Dr. Burgess has the viewpoint of the practical statistician and also that of the experienced teacher, which has taught him how to write that those who read may understand him without difficulty.

Textbooks on statistics need not be textbooks on economics,

as some writers apparently think, to serve their purpose to students of economics. Dr. Burgess has done well in selecting his illustrative examples from various fields, science, education, biometry, economics. This should make the book scarcely less interesting to students of economics, and decidedly more interesting to students in other fields of study.

No doubt the title "Mathematics of Statistics" is forbidding to some. The treatment is, however, not so mathematical as the title might suggest. The treatment is mathematical in that it is an orderly and logical discussion of the methods used with quantitative data, very little space being given to the methods of collecting and arranging the data. The mathematical processes used in the book are of a strictly elementary nature. However, some of the developments in the later chapters will be much more easily followed by those who possess considerable mathematical knowledge.

The brief summary at the end of each chapter is a splendid thing for the student. After reading the chapter, he reads the summary and notes the points that the author claims to have dealt with. He "takes stock" to see if he has grasped the import of each of the points, and just how it was made. He thus makes these points his own, and is not obliged to hunt them up later when he finds them used in some application.

A few outstanding points may be mentioned specifically:

Chapter II. His description of the ratio chart or semi-logarithmic diagram is not only very instructive to those whose knowledge of logarithms is somewhat meager, but also very enlightening to those who have long considered logarithms as a mere working tool.

Chapter V. The term "mean with equal weights" is a happy substitute for the more usual one, "unweighted mean". His definitions of the various types of averages are very definite. He leaves no vagueness as to just what is meant by the mean, the median, and the mode in the case of a frequency distribution. The example treated on page 98 shows very clearly why the geometric mean best serves the purpose of "an average" in some cases.

Chapter VI. The subject of "Index Numbers" introduced at this stage serves a double purpose. It furnishes a good example of the use of averages, and also provides the student especially

interested in economics with a good treatment of a subject in which he is bound to be interested. Students might do well, however, on a first reading, to study the first six pages only, and defer the reading of the remainder of the chapter. If the purpose of the chapter is to serve as an example on "averages" it constitutes too long a digression from the main purpose of the text.

Chapter VII. In finding the "total deviation" (regardless of sign) the author has done well to point out that if the items are spread over the class interval and not all concentrated at its mid-point, a correction must be made to the result usually obtained by the "method of moments", for the items in that class interval whose mid-point is taken as the assumed mean. This correction, sometimes of considerable size, is usually ignored by writers on the subject. Some will probably ask why he does not make a corresponding correction in obtaining the standard deviation for the same type of frequency distribution.

Chapter VIII. In introducing the subject of "Regression or Trend Lines" it might perhaps have been better if the author had first given an example of fitting a straight line or parabola to some given points on the xy -plane. The student would then pass readily to a numerical example such as he uses. This chapter would have been strengthened considerably by the presentation of an example on the use of the semi-logarithmic graph, and, if space permitted, a brief discussion of the criteria which determine which type of curve one should try, when the straight line fails to fit the data. This, it seems to the reviewer, would be more useful to the general student than much of the material in the following chapter.

Chapter X. The method of introducing the "coefficient of correlation" from the regression lines is interesting, and well done.

It is gratifying to see that he has arranged the table on page 212 with y increasing from the bottom up, thus following the custom used in Analytical Geometry. Many writers have reversed this order, causing much confusion to the student whose mathematical experience is limited.

An interesting application is given, on pages 216-218, of the use of the coefficient of correlation in determining the "lag" of one historical series as compared with another.

LLOYD A. H. WARREN

Direct Method of Determining Cyclical Fluctuations of Economic Data. Martin Allen Brumbaugh. Prentice-Hall, Inc., New York, 1926. P. 73.

The author, over a period of years, has had frequent occasion to analyze historical or series data. So much time was spent in removing secular trend and seasonal variation that he was prompted to determine a method of simplifying the process of computing cyclical fluctuations. He sets forth this method in a short text of five chapters. While not intended primarily for the student, it is presented in a manner not too complicated for the business executive with a mediocre knowledge of the subject. It is the author's hope that this book will prove both interesting and instructive to all those who directly or indirectly are concerned with the operation of the business cycle.

The subject is presented by stating the problem at hand and the steps employed in building up, from certain hypotheses, a method of measuring cycles without being forced to measure and remove trend and seasonal movements as preliminary steps.

In Chapter II, the most popular methods now in use for measuring secular trend, seasonal variation and cyclical fluctuation are enumerated and briefly discussed. These older methods are based on definitions of secular trend and seasonal variation which are sufficiently rigid to insure the measurement and removal of such movements item by item. The "Direct Method" is based on the premise that the exact amount of any time series which is due to trend and seasonal movements never can be known and it is therefore possible to make more flexible assumptions regarding them. The author then develops his method of measuring cyclical fluctuations, the reader being led from point to point in a logical manner.

In the next two chapters the "Direct Method" is applied to controlled and actual sets of data. The discussion in each instance is profusely illustrated by graphs, tables and examples. In a brief conclusion, a re-statement is made of the author's method and the salient points involved in this method.

Dr. Brumbaugh has developed his method of measuring directly the cyclical movements of any set of data in an able and concise manner. The presentation of intricate formulae and

their derivation has been reduced to a minimum. The reviewer has had neither the opportunity nor the facilities to make an exhaustive test of this method and is therefore not in a position to say whether it is right or wrong. It is his opinion, however, that the treatise will prove a real addition to the literature already published on cycles and their measurement.

W. F. ROEBER

The Economics of Life Insurance. Solomon S. Huebner. D. Appleton and Company, New York, 1927. Pp. xxi, 219.

The Editor's Preface to this book begins as follows:

The series of which this is the initial volume offers a specialized literature, in textbook form, treating comprehensively the far-reaching conservative and creative forces of life insurance. Its purpose is to bring the useful applications of this important branch of insurance into proper relation with the various applied economic and social subjects upon which it has so vital a bearing. (p. vii.)

The volume under review is an analysis of the need of life insurance from the standpoint of the economic value of the life insured. On an early page we find the economic value of human life

defined as the monetary worth of the economic forces that are incorporated within our being, namely, our character and health, our training and experience, our personality and industry, our judgment and power of initiative, and our driving force to put across in tangible form the economic images of the mind. (p. 5.)

It is pointed out that this human life value is fundamental rather than secondary in that all property values arise through life values. It is also pointed out that, while life values are much larger in total than are property values, far less intelligent attention is given to them than is given to property values when insurance is under consideration. Throughout the book the thought is followed that life values should be appraised by the same careful methods of analysis which are applied to the appraisal of property values, and that, after such appraisal, life insurance should be used to safeguard such values against death, permanent total disability and old age.

Figures are produced to establish the importance of life values in the United States by capitalizing income as a 5 per cent

perpetuity. It is also suggested that education and other training, as well as good will, should be capitalized. In another chapter the appraisal of life values is taken up, income being appraised by three methods, as a perpetuity, as an annuity for the expectation of life and as a life annuity.

A chapter entitled "Capitalization of Life Values" begins with the following:

A life insurance policy is a callable sinking-fund bond, issued against a human life value and evidencing its monetary worth, in much the same sense that corporations issue callable sinking-fund bonds against property values to evidence their worth. (p. 67.)

The idea given in this quotation is elaborated in the chapter, a close parallel being maintained throughout between the relationship of a life insurance policy to life values and the relationship of stocks and bonds to property values.

In a chapter entitled "Depreciation of Life Values—The Use of Sinking and Emergency Funds", a strong argument is made for the importance of savings to care for old age. The idea of children as an economic asset is condemned as cruel and uneconomic. The author's views on this point are summarized as follows:

The present generation is in duty bound, insofar as possible, to do the best it can for the generation to come. That is progress. But the coming generation should not be called upon to take care of the present generation and our educational system ought to instill this thought into the consciousness of the public. (p. 78.)

This chapter points out the advantages of life insurance contracts, as a means of saving, as compared with bank accounts or even with the best investments. In a number of places it is made clear that safety is obtained through an insurance company because the loss on any particular investment of the company which proves unsatisfactory is shared by all, while if the individual had put his savings into this particular investment he would have stood the loss alone.

The value of life insurance for the protection of a business against the possible loss of the "life value" of important officers or employees is developed quite forcibly, as is also the use of life insurance to protect the shrinkage of an estate at the time of death.

The book is divided into three parts, as follows:

- I. The Place of Life Insurance in Economics;
- II. Economic Principles Exemplified by Life Insurance;
- III. The Creative Functions of Life Insurance.

In the third part the investment feature of life insurance is emphasized and the author makes a strong case for his thesis that life insurance contracts are an ideal means of creating an estate. The "semi-compulsory" feature of premium payment, the safety of the "investment" and the life insurance element which results in the estate being completed at death are stressed as features which place life insurance in the front rank as a method of creating an estate.

With the exception of one chapter, this book is written to appeal to the individual and to the salesman of life insurance. It gives a multitude of reasons why the individual should insure and supports a need for insurance out of all proportion to the insurance now carried by most individuals.

Near the end of the book is a chapter entitled, "Promotion of Life Conservation." In this chapter the activities of different companies for the prolongation of life are emphasized and compared with similar activities for the prevention of loss in connection with various forms of property insurance.

It may be a mistake for an actuarial society to review books written from a salesman's standpoint. The salesman must, necessarily, be buoyant and optimistic. The actuary must, necessarily, be critical. Both attitudes are essential to the success of an insurance company.

The book under review purports to be written as a textbook for colleges and universities to use following an elementary course in life insurance. In the opinion of the reviewer this book is not fitted to be such a textbook for the following reasons:

1. The book is diffuse and wordy while a textbook should be concise and compact.
2. The book contains many repetitions, the same idea being expressed over and over again. The separate chapters contain subject matter so closely related that reasons for the separation and repetition involved are not clear to the student.

3. In listing reasons to support particular statements different reasons are so nearly identical that logic could not support a student's memory in fixing those reasons in mind. Such writing may be useful for some purposes but it does not make a satisfactory textbook.

4. In parts the book appears to have been hastily written, correct grammatical construction being neglected in some cases.

5. In many places the author fails to differentiate ideas which, from the standpoint of a student, should be kept distinct. As a result the reasoning is frequently defective and inconclusive.

It would be extremely unfair to make the above statements without giving detailed references to support them. On Pages 5 and 6 we find, "It [life value] is the cause (the creator) of all other values and not merely an effect. Were it not for the life value there would be no property values at all." On Page 34 the same idea and many of the same words appear, as follows:

Property values, in fact, are the result of human effort. Were it not for the life value, there would be no property value at all. The human life value is a cause and not an effect.

The book is centered about the economic value of human life. The definition of this value, as given early in this review, makes no mention of the dependence of that value upon other lives, nor does it suggest that the desirability of insuring that value is dependent upon the relation of the life to beneficiaries. In fact the author goes to considerable pains to produce figures, with many ciphers, to give an idea of the total of human life values, obtaining these figures by capitalizing, as if it would be reasonable to think of perpetuating those lives. In other places in the book the author recognizes that a life is only of value financially in relation to other lives.

On Page 6 we find:

One of the primary purposes [of life insurance] is to guarantee dependents against loss of the current earning power of the insured through death in any of its forms.

Skipping two sentences we read again:

Its broad mission is to protect against the total and presumably permanent loss of current earning capacity when that loss is occasioned by the physical destruction (the economic death) of the life insured.

Then follow three pages devoted to establishing that death of the "working life of the insured" may be due to:

1. Actual premature death,
2. Total and permanent disability,
3. Retirement from active work.

Then follows the statement:

Life insurance alone is available for the protection of the life value against the aforementioned three types of death and has no substitute. (p. 10.)

To the mind of an actuary this discussion involves a confusion of terms which is not only lamentable in itself but which should by all means, be kept from an immature student. The author distinguishes earlier between property insurance and personal insurance, and if he wants to class all kinds of income insurance as personal insurance that might be excusable, but to use the term life insurance to cover not only what has, from years of usage, been termed life insurance but also to cover permanent total disability benefits and annuity benefits seems extremely unwise from the standpoint of obtaining clear-cut ideas of the insurance business.

Repeatedly the author hits upon the importance of insurance to replace an interrupted income, and there is no question but what the greatest need of insurance in this world is to regularize income, whether it be life insurance, annuities, health and accident insurance, unemployment insurance, loss of use insurance, or any other of the many forms of so-called property insurance. But why the author should choose to call three of these forms life insurance, with the explanation that these three are important and are undertaken by life insurance companies, is not at all clear. The fact is that life insurance companies are insuring many other forms of risks besides the three mentioned, and apparently the only reason in practice for having chosen to call these three forms life insurance is that they all appear at times in one contract.

Throughout the book the author seems to take the attitude of being unable to understand why we have had for years a well developed method of property appraisal but have not established such methods for appraisal of life values. At no place does he study the analogy which he is drawing to the point of noting

that property is bought and sold, and that the individual is interested in property, in many cases, because it can be bought and sold. Slavery would probably very quickly introduce a notion of appraisal of certain human lives.

One cannot go far into the philosophy of life insurance without realizing that the need for insurance is greatest among just those classes who can least provide for it. Without any question the greatest social need for life insurance is among wage-earners. The great majority of our women and children are in homes of small incomes and these children are the citizens of tomorrow. Insurance of these classes receives scant attention in this book for a reason clearly brought out in the book. This is in no sense a criticism of the author but it has a direct bearing on the thesis of the book. Although we may appraise with great care the value of human lives there is no evidence at present that we will ever be able to have anything like adequate life insurance for those large classes who need it most. The reason is given on Page 25, as follows:

The regrettable thing is that the present standard of wages for the rank and file of employees does not yet contemplate anything like adequate provision for the future maintenance of family dependents. For this group, in view of the pressure of current living costs as contrasted with income, the amount of available life, health and accident insurance is as yet pitifully small.

Again on Page 44 we read:

For many, however, especially the wage-earning and salaried classes, the amount of available insurance is pitifully small when our attention is focused upon the income needed for decent family maintenance. In fact, the prevailing industrial standard of wages and salary is based essentially on family needs for the immediate present and does not contemplate anything like adequate provision for the future.

The author is hopeful regarding this matter. He says that

In the past, when some fundamental economic need for the working masses became clearly understood and appreciated by the overwhelming majority, the wage level had to undergo an adjustment in the interest of its general realization. (p. 45.)

He feels that when life insurance is recognized as a necessity wages will be increased to provide for it. It seems to the reviewer quite questionable whether this argument is sound, and if it is, it seems to be anything but complimentary to our civilization to think that some power fixes wages of a majority of us on

the basis of a certain standard of necessity. This would seem to carry with it the thought that another class must get all excess of production over what is necessary for the wage-earner.

Throughout the book the author takes the stand that life insurance may be used to continue the economic value of human life after death. On Page 52 we read:

Is it not inconsistent for the human being to make himself more and more valuable and then suddenly, just when that value is greatest to his family and his business, let it disappear entirely because of death or disability?

In the opinion of the reviewer this point of view is entirely erroneous. The value of a human life disappears at death. There is no question about this. An active physician is, we hope, a social asset whose services are quite useful to a community but they certainly cease with his death. An engineer driving a train is of value to society but a dead engineer is no longer an engineer at all so far as society is concerned. Fundamentally, insurance is not for the purpose of avoiding economic loss. It is rather to enable society to spread a loss when it does occur rather than to burden one or a few individuals with that loss.

We are all convinced that there is room for an enormous increase in the amount of life insurance on citizens of this country but there is no use talking about continuing the economic value of a life after death, and even if we could do this there is no object in such continuation. In many places the author fails to have clearly in mind the distinction between an economic value and an insurable interest.

On Page 54 we find the following introductory statement:

But to obtain a panoramic view of the economic importance of life insurance, it is desirable that we should enumerate them at this point. Briefly stated they are:

The antecedent of the words "them" and "they" is not readily found. The "brief statement," consisting of eleven numbered paragraphs covering eight pages, is anything but brief, and is written in such a manner as to defy the student who should attempt to memorize those eleven items showing the economic importance of life insurance.

On Page 57 we read that "The purpose of life insurance is to eliminate the present two fold distinction between loans." On Page 167 we read, "The purpose of life insurance is to convert

commercial loans into properly secured loans, and thus to make all loans collateral loans." On Page 107 we find that "The function of life insurance is to create and maintain estates."

In a number of places the author shows an extremely sordid view of life. In the Preface he mentions the premium payer's "one great ambition, namely, the accumulation of a personal estate." On Page 57 we find that "Our working life is largely devoted to the creation of a personal estate." Surely this does not represent the attitude of most of us. At any rate, the lives which we consider most worth while are those of men and women who are thinking very little, if at all, of personal money matters.

On Page 120 a paragraph begins as follows:

It is regrettable that life insurance has been so generally regarded in the past as an intangible and altruistic service, intended almost altogether for the protection of widows and orphans and related only remotely, if at all, to the insured's personal advancement and happiness.

The very next paragraph opens as follows:

Nor should our view of life insurance protection be limited to protection of widows and orphans only, although that function of life insurance is all-important and needs always to be emphasized.

The reviewer claims to be as enthusiastic as anyone can be about the need for life insurance and the uses to which it can be put. He fully appreciates how woefully inadequate the life insurance protection of most of us is. He feels strongly that there is much to be desired in the way of textbooks for the guidance of students who are preparing to take up the insurance business in any of its phases. However, he feels that the book under review is entirely unfitted to be put in the hands of such a student. He feels further that the book shows signs of having been hastily and carelessly prepared, and that the author has not done himself justice in this effort to cover a subject of which a concise and thorough treatment would be a real contribution to insurance literature.

RAINARD B. ROBBINS

Taxation. Harry J. Loman. D. Appleton and Company, New York, 1927. Pp. xiii, 257.

"One of the principal purposes of this volume is to make the agent better acquainted with a particular phase of his business, especially the use of insurance to pay death duties." (p. 4.)

The expression "death duties" is used as an inclusive term covering two forms of state taxes, namely: inheritance tax and the estate tax; as well as the Federal estate tax,—all three being sometimes payable.

The book first deals with various tax theories and shows that all of the legitimate theories are violated in many of the states; and the general impression (probably correct) which the reader derives from the volume is that life insurance taxation in the United States is a hotch-potch of half-baked theories, governed and controlled by the desire to obtain as much revenue for the State as can be painlessly extracted from the people. Life insurance premium taxes, license fees, and filing fees, are explained and intelligently discussed; the author then proceeds to his more immediate purpose and shows the large amounts which may be payable for Estate and Inheritance Taxes; also how such payments may be met by affecting life insurance, and, in some instances, minimized. He clearly sets forth the benefits and advantages of making policies payable to named beneficiaries, with proper explanations and due emphasis; also, the circumstances under which it is advantageous to have the proceeds of policies payable *in instalments* to named beneficiaries. In general, it is shown that, if the proceeds of a life insurance policy are receivable by the executor in his official capacity, then such proceeds swell the estate of the testator and increase the amount of death duties payable. Accordingly, it may happen that, unless an applicant for life insurance is well advised, he may, by effecting life insurance to pay his death duties, increase to a considerable extent the amount of such death duties which have ultimately to be paid.

The general trend of opinion would seem to point to a growing popular attitude, now being reflected by Federal legislators, that inheritance and estate taxes should be a function of state legislation and should ultimately be abandoned by the federal taxing authorities. This is a desirable aim, and it would simplify matters greatly if this were brought about. The thought should be further spread and promulgated so that the condition may be attained at the earliest possible moment.

There is no uniformity in the state laws as to either inheritance or estate taxes. In this direction, however, the author states that "only a few states place any tax on the proceeds of life insurance

policies paid to named beneficiaries, although many of them tax proceeds payable to the estate." (p. 52.) The advantages of insurance as a method of meeting such taxes, are summarized, and set forth to an intelligent reader; the author gives illustrations of the peculiar workings of state tax laws as applied to death duties, in respect of people who may be domiciled in some of the eastern states. Sometimes an estate is subject to taxation in a dozen different states because of stocks of railroads or other holdings in corporations located in various states. The last chapter of the book, covering some ten or eleven pages, deals with special tax problems and gives an outline of the taxation of life insurance trusts. A careful study of this will remove many erroneous impressions now held by life insurance agents.

The appendix, which is much longer than the book itself, is useful for reference purposes, as it contains a digest and analysis of the Federal estate tax law, and the various state inheritance taxes. This appendix contains in brief form all the essential information which a student of the subject is likely to need; but it will, of course, need revision from time to time as our many legislators change our taxes frequently.

HENRY MOIR

The Law of Salesmanship. E. Paul Huttinger. D. Appleton and Company, New York, 1927. Pp. xiii, 250.

This book reveals the author an artist in the employment of compact phrase, selection of controlling principle, elimination of waste and conservation of time. That an insurance organization is no stronger than its production staff is the obvious conclusion to be drawn from it. The triteness of this statement argues its truth and the little volume serves a distinctly commendable purpose in resuggesting the importance attaching to the selection of insurance agents. In the past the indicia of the ideal sales representative have been well recognized. Confidence without presumption, enthusiasm without artifice, balanced judgment, loyalty to company but not without consideration for client, have stood forth as his cardinal virtues; but the extension in these times of the principle of vicarious liability so well set forth by Mr. Huttinger in its connection with the insurance field requires today an additional quality—the

salesman aware of the legal rules governing his contact with the public and awake to the consequences attendant upon their breach. By a judicious selection of leading cases the compiler offers to the agent, the broker, the home office man and to all who are interested a handy and balanced digest, accurate in its interpretation and appreciation of principle and as complete as any lay reader will require.

I refer to the work as a review of authorities rather than an exposition of principles. It is just that. Mr. Huttinger presents a sound and considered paraphrase of each case as illustrative of the rule involved with a not infrequent commentary on the trend of opinion and the weight of authority. The mass of litigation on the subject renders discernment obviously necessary in the choice of matter, particularly as the book does not pretend to be exhaustive, and in this task, as heretofore stated, the author has excelled. That a clear-cut and reconciled refinement of rule is difficult will be cordially subscribed by anyone who has had occasion to attempt the analysis of the conflicting pronouncements of the courts upon this subject. Mr. Huttinger does well to present a digest which does not, on perusal, leave the reader as confused as the material comprising its basis.

In the brief span of 232 pages of text, practically all pertinent points of importance are considered, rebating and its penalties, the various state license laws, the interpretation of agency contracts and the right to compensation and, what is of larger interest, agency power with its many facets of fraud, mistake, negligence, premium collection, waiver and estoppel. The chapters last referred to are particularly illuminating and properly constitute a major portion of the work. The matter of the incontestable clause is briefly considered in an appended chapter. A usable index and a fine list of leading authorities is subjoined.

The prefaced aim of the book is to provide

. students of life insurance and all those who are engaged in the business in any capacity with a non-technical digest of the more important decisions dealing with the subject of agency.

This object is accomplished. The writer does not hesitate to commend it and to extend his personal thanks to Mr. Huttinger for a readjusted perspective of the law of sales agency.

WILLIAM BROSMITH

Industrial Group Insurance. National Industrial Conference Board, Inc., New York, 1927. P. 44.

The National Industrial Conference Board has been making a series of studies in industrial relations. "Industrial Group Insurance" is one of the subjects studied in this series, and the results of this study are set forth in a brochure carrying the above caption. The investigation was conducted by Mr. Jules Friedel and assistants of the Conference Board's Research Staff, under the supervision of the Board's Staff Economic Council.

The question is studied from the point of view of its social importance, that is, "from the point of view of its importance as a personnel problem in industry." In its studies the Board "avails itself of the experience and judgment of the business executives who compose its membership, and recognized authorities in special fields, in addition to the scientific knowledge and equipment of its staff" (p. 3).

The conclusions drawn in the report come from the reports of 618 different insured members in their organization, covering 1,234,924 employees, for over \$1,300,000,000 of insurance.

The monograph may be divided into two parts:

- A. What Group Insurance is.
- B. What Group Insurance has accomplished.

Under A—What Group Insurance is—we have a discussion of

- 1. Group Life Insurance.
- 2. Group Accident and Sickness Insurance.
- 3. Group Pensions.
- 4. Mutual Benefit Associations.

Under B—What Group Insurance has accomplished—there is discussed:

- 1. Aims and effects of Group Insurance.
- 2. Attitude of employees.
- 3. Attitude of employers.
- 4. How to obtain best results from Group Insurance.
- 5. What to learn from failures in Group Insurance.

In treating the general subject of what Group Insurance is, the book not only gives the definition of Group Life and Accident and Sickness Insurance, but it also gives many of the underwriting rules governing the writing of these forms, the reasons

for these rules, the average cost for insurance, and a historical sketch of the accomplishments in each line.

The subject of Mutual Benefit Associations, is discussed from the standpoint of its relation to Group Insurance, pointing out the efficacy of Group Insurance along some lines, Mutual Benefit Associations along other lines, and particularly how the two may be united to obtain maximum results. In closing the first part of the report, a brief reference is made to the subject of pensions and its relation to Group Insurance.

The second part of the report deals with the accomplishments of Group Insurance.

In this part, we have a very valuable study of the social effect obtained through Group Insurance, discussing in general the reasons given by the employer for the placing of Group Insurance on their employees, and the results obtained from such a procedure, with particular reference to the effect upon both employees and employers. The book is full of valuable tables, but none of more value from this standpoint than the final table in the general summary, giving the reaction of 550 concerns as to their attitude toward Group Insurance.

This is the most valuable booklet yet published on the subject. Its value lies in two points:

1. It contains a most excellent description of what Group Insurance is and what its requirements are; without any previous knowledge of the subject, one can obtain from it a clear idea of what it is all about.

2. The conclusions drawn as to the results obtained from Group Insurance are particularly valuable from the practical experience of business men, interested not in the sale of Group Insurance, but interested in the practical results obtained therefrom, for their industry and its economic value to them.

The book is of interest, therefore, not only to the student, but also to the practical business man.

WALTER I. KING

CURRENT NOTES

SYDNEY D. PINNEY, CURRENT NOTES EDITOR

COMPENSATION RATEMAKING PROCEDURE IN NEW YORK*

After considerable intensive study by a special Conference Committee, consisting of the National Association of Mutual Casualty Companies, the National Bureau of Casualty & Surety Underwriters, the State Insurance Fund, the National Council on Compensation Insurance and the Compensation Inspection Rating Board, which was appointed by the Superintendent of the New York Insurance Department, a new system of ratemaking and rating procedure has been developed which, it is believed, will assist materially in overcoming some of the difficulties encountered under the old system. It must be admitted at the outset that the statistical data before the Committee was far from perfect; consequently the new system must be looked upon as a practical remedy for a serious situation, and will undoubtedly be subject to amendment and refinement as more accurate and more detailed statistics become available.

The revised ratemaking system as approved by the Superintendent comprises the following items:

1. Determination of the average rate level on the basis of the three most recent years of experience and of classification relativity on the basis of the five most recent years of experience.
2. Recognition of differences in loss ratios dependent on size of risk and the establishment of suitable differentials for selected groups.
3. Recognition of an invariable element in the loading for service and expense and the adoption of an expense constant with corresponding reduction in the percentage loading.
4. Adoption of a minimum premium formula corresponding to the average annual wages of a single workman.
5. Recognition of trends in the experience of individual risks, allowing greater weight to more recent experience.

Item 1 requires no further consideration here inasmuch as the principles outlined therein are already part of the general ratemaking procedure in most states.

*This article contributed by Mr. A. G. Smith.

Item 2. Differentials have been established between small and large risks by means of flat charges or "loss constants" which on small risks will be added to the premium produced by applying the appropriate rates to the payroll, and by offsetting the aggregate of such loss constants by percentage reductions in the manual rates. Three broad industry groups have been recognized in this connection and the appropriate loss constant determined for each such group are as follows:

Industry Group	Loss Constant	Rate Reduction
Manufacturing.	\$20	2.5%
Contracting.	40	5.0
All Other.	4	0.0

In selecting and applying these constants, the line of demarcation between small and large risks has been drawn at \$400 earned premium, representing approximately the point of qualification for experience rating in New York.

There are some rather obvious defects in the method selected for offsetting differentials by size of risks which do not need to be discussed here, but it was felt that it was the best way of handling the situation in view of the data available and the practical aspects of the matter.

Item 3. An "expense constant" consisting of a flat charge of \$3 to be imposed on each policy where the earned premium is less than \$400, has been provided in recognition of the fact that there is a certain minimum expenditure, unrelated to the premium, incurred in the mere writing and carrying of a policy. In addition to this \$3 there will be on the average \$2 derived from the loss constants, making a total of \$5 for such minimum expenditure for home office overhead and payroll auditing. While the majority of the Conference Committee believed a minimum of \$10 was needed, the Superintendent approved \$5 which was held by the minority of the committee to be sufficient.

In practice the loss and expense constants will be combined in a single charge which will be collected on each policy where the premium at manual rates is less than \$400 except that where the addition of such combined loss and expense constant would make the total more than \$400, only the \$400 will be charged. Although the \$400 limit was adopted as representing the boundary between experience rated and non-experience rated risks the

rating status will not be considered in the application of the constants.

Item 4. Heretofore the minimum premiums in New York have been based on a minimum payroll of \$500 with the addition of a \$10 constant. The Conference Committee believed, however, that the smallest unit of exposure to be used in underwriting a workmen's compensation risk should be the exposure represented by one man working for a period of twelve months. A conservative estimate of the average wages of a single workman for one year in New York is \$1,500 which has therefore been adopted as the minimum payroll requirement. To the premium obtained by applying the appropriate manual rate to such minimum payroll will be added the loss and expense constants as provided under items 2 and 3. The effective minimum premiums will then be fifteen times the rate plus \$23, \$43 or \$7 depending on the industry group into which the classifications fall.

Item 5. In the experience rating of individual risks a number of carriers have believed for some time that it is not altogether just to penalize an assured for poor experience incurred four and five years ago especially in those cases where the employer has made effective efforts to decrease his accident rate; and on the other hand that employers whose experience record has been growing worse rather than better should be charged more accordingly. In order to recognize such trends in the experience relative weights of 1, 2, 3 and 4 have been introduced which will be applied to the experience of the earliest, second, third and fourth years respectively, thus discounting the effect of the earlier years and increasing that of the later ones.

Coupled with the foregoing changes in the ratemaking system was a recommendation for a unit system of reporting experience to supersede both the present Schedule Z and individual risk data for experience rating purposes. At the present writing the form and details of such a system is being considered in the regular committees of the Board so that nothing definite can be said about it at this time. Some such system, however, must certainly be adopted in order, first to justify and refine the rather crude method adopted to recognize differentials by size of risk, second to obviate the present discrepancies between manual ratemaking statistics and experience rating data, and, third to furnish data in such a form that it may be analyzed in any way

which may seem desirable if the present ratemaking method proves unsatisfactory.

THE INVESTMENT FLUCTUATION CONTINGENCY IN CASUALTY INSURANCE COMPANIES*

I. In a recent volume of the *Proceedings* of this Society, Mr. Norman Lombard, in an article entitled "The Interest of the Actuary in Stable Money" describes in a way not to be evaded the great evil of the fluctuating dollar. He lays special stress on the extent to which this evil effects the insurance field in general, and urges every actuary to take a vital interest in the methods being used to stabilize our currency. For reasons to be given later, this appears to be a very suitable time to inquire as to whether or not the casualty companies, especially the many new ones and smaller ones, have been setting aside for a rainy day a fair share of their investment profits.

The difference of opinion that exists on the subject at the present time is best shown by quoting from two letters of prominent casualty executives; one giving the optimistic side, the other the opposite. The remaining opinions received by the writer vary between these two extremes.

"The points of view from which insurance companies may be criticized show a great tendency to multiply during recent years, the most novel one being the fact that their assets have appreciated in value since purchase. Just why this should be thought to be a subject of criticism is a little beyond my comprehension, but nevertheless that seems to be the case.

"Fluctuations in values and variations in the rate of interest earnings are nothing new. About twenty-five years ago many bonds were selling on a basis of 3.75 interest return and consequently brought higher prices than is the case today. Between that time and this, such bonds have suffered an enormous depreciation in value, most of which, if not all of which, has now been recovered. Insurance companies cannot control the rate of interest or the market quotations in stocks but must take their chances as do other investors. If their investments are prudently made, in the long run they will be spared serious losses. If in times of appreciation they capitalize the gains in market values,

*This article was prepared by Mr. Donald M. Overholser and was presented at the November 1927 Meeting of the Society.

they may make, as many have done, permanent additions to their funds.

"I think perhaps the truth of the matter is that the insurance companies have been enjoying success in their investment departments for so long and are so optimistic as to the immediate future that very few, if any, of the executives have made any plans for dealing with a situation such as you describe where a sudden decline in the market would affect investments to a material extent. Personally, I feel that such a situation would be calamitous in the casualty insurance field because of the apparent inability of the companies for some years past to make an underwriting profit. An underwriting loss, provided it is not too great, can be absorbed provided investment earnings are maintained on a normal basis. But if there should be a loss from both underwriting and investments, I am afraid a considerable number of the companies would be seriously embarrassed."

Just a look at statements of casualty companies will satisfy one that in the past years they have not been earning a fair underwriting profit. Furthermore, the present condition of the automobile liability business and the uncertainty of compensation, gives future underwriting results a rather doubtful outlook. The question of investment return, therefore becomes all important. Of course, a company cannot make its investments pay more than the market rate, but it is the writer's belief that the returns of the current market rate should be consumed only at a constant speed year by year; the excess in good years being set aside to take care of the slump in lean years. Various methods of effecting this stabilization will be considered later on.

At first sight, one would suppose that all companies are doing this very thing. Upon investigation the writer is led to believe that quite a few companies, having enjoyed success in their investment departments for so long, and having become so optimistic about the immediate future, have not made and are not making provision for a violent drop in the market and all that goes with it.

It might be mentioned at this point that there isn't much doubt that the combined capital and surplus of all but the weakest companies could withstand anything but a calamitous change in values. But would not a large drain on surplus and perhaps capital have a most demoralizing effect on the well-financed

insurance business; hence on the public and on business in general? Insurance should insure itself, in other words.

As to whether such a slump as touched upon will occur in the near or distant future, or at all, is, of course, beyond my province to say. Nevertheless, the following facts known to all of you may be repeated for the sake of emphasis and perhaps discussion.

Europe has recovered from the War. Competition with America is increasing at a rapid rate. The recent tariff alterations with France, the formation of the Iron and Chemical Trust, and numerous other economic developments, give the signs of the times.

Following the above is a slackening of business, shown by the earnings statements of some business lines.

The present uncertainty of the stock market and the rising bond prices furnish additional cause for anxiety. The usual forcing down of the discount rate by the Federal Reserve Board when money was plentiful and business slackening up, adds still further cause for apprehension.

Finally, in this thought, the fact that no one yet knows the meaning of "choose," adds an uncertainty to the near future of business and investments.

It is the opinion of some authorities on casualty insurance that the interest on reserve should be considered in the nature of an underwriting rather than an investment item. In this respect we might say that the rate of interest plays at least a theoretical part in the formation of premium rates. As to the future of the interest rate, it is interesting to observe that the factor used in life insurance calculations is usually 3 or $3\frac{1}{2}\%$ this for long term investments such as are not in general practical for the casualty company to purchase.

Life net rates are thus predicated on an assumed interest rate of some 3% to $3\frac{1}{2}\%$. The casualty business is now being run on an interest return of far greater amount, and in many cases no reserve is being set up to discount the drop in the interest rate which most economists consider to be inevitable. The rates just quoted show that life actuaries also entertain the same opinion.

It is realized that the actuarial function of the life and casualty rates of interest is far different, and that the comparison just quoted is not by any means an analogy. It is given for illustra-

tion and to raise the question: "Should the interest return, or a certain portion of it, be considered more in the nature of a function correlative with the reserves than it now is?"

As a final word on the general financial situation as applicable to the companies I quote from a letter of the President of one of our greatest casualty companies, to wit, "It is obvious with conditions as they exist today the assets of the companies are unduly inflated, creating a more or less misleading impression as to their financial structure." Adapting his words to our argument, the companies are carrying their assets at values which may not continue indefinitely. A contingency reserve of suitable amount should certainly be carried to balance smoothly a drop in the market value of the assets without an undue strain on surplus at any future date.

II. Lack of time has prevented an investigation into the present status of all stock companies, and the following data are taken from figures representing approximately 75% of all business written in 1926 by casualty companies, excluding those companies which write life insurance as well as casualty lines. Unfortunately, many of the companies are large ones, and it will not be possible to demonstrate directly the effect of the interest rate by statistics based on smaller casualty companies.

At the close of 1925 and 1926 the invested assets, based on market values, were distributed as follows:

Class	1925		1926		Net Change
	Amount	% of Total	Amount	% of Total	
Real Estate.....	\$30,889,326	6.3	\$32,231,332	5.7	-0.6
Mortgage Loans....	23,384,334	4.7	27,793,576	5.0	0.3
Collateral Loans....	820,822	0.2	1,617,695	0.3	0.1
Bonds.....	381,783,864	77.3	427,945,018	76.0	-1.3
Stocks.....	57,272,299	11.5	73,356,767	13.0	1.5
Total.....	\$494,150,645	100.0	\$562,944,388	100.0	

While it is realized that nothing definite can be established by an examination of one year's movement of surplus, nevertheless a brief analysis for the year 1926 is given just as a matter of interest.

The net interest and rents earned during the year were \$24,630,220, showing a yield of 4.6 per cent on the mean invested assets. The net gain from appreciation was \$9,109,523, or 1.7 per cent. Dividend requirements were \$14,158,113; *i. e.*,

15 per cent, on a capital of \$91,750,000. The technical underwriting loss amounted to \$860,353. The net gain in surplus during the year was \$20,804,352, making a surplus at December 31, 1926 of \$126,882,321.

Assuming the capital of the companies as 1000, the increase in surplus is built up by the following indices: interest and rents, 268; appreciation, 99; miscellaneous, 23; underwriting loss 9; dividends, 154 or a net of 227. To this must be added the increase throughout the year in voluntary contingency reserves of 23 giving a final increase of surplus, relative to capital, of 250, exactly twenty-five per cent, a fine showing indeed.

It might be added at this point that assuming a 40 per cent equity in unearned premiums, such increase in equity amounted to \$6,000,000 or 65 points expressed relative to capital.

Furthermore, the total voluntary contingency reserves outstanding as of December 31, 1926, were \$5,500,000 or $2\frac{1}{2}$ per cent of the capital and surplus outstanding at that time.

Let it be repeated again, that the above data are applicable to the largest and best casualty insurance companies, and should the smaller companies, writing some 25 per cent of the total business, be considered, the results of an analysis analogous to that above would not be quite so favorable.

III. The question as to whether the casualty companies are setting aside a fair amount of their investment gains as a contingency reserve can now be considered. Just what constitutes a fair stabilizing reserve is a difficult question to answer, as the reserve naturally is a dependent function of size of company, acceleration of writings, age, spread and kind of investments, appreciation and interest rate, capital, surplus, dividend rate, and finally the underwriting profit and loss ratio itself. Each company must work out its reserve, guided by the limiting particulars of its own financial system.

Other things being equal, a drop of one per cent in the interest return during 1926 would have amounted to a drop of 59 points in our index, or assuming the surplus to increase at the same speed, to a decrease of $\frac{2}{5}$ of the current dividend rate.

The money made by appreciation during 1926 was equivalent to 65 per cent of the dividends paid out. Take away the appreciation and there would have been a dividend rate of 5 per cent instead of 15 per cent, other factors remaining the same.

Contingency reserves at the end of the year were one per cent of the invested assets, which appears somewhat short of a fair amount necessary to offset a radical depreciation in values such as might be caused by an unexpected panic precipitated by a sudden war or calamity; an earthquake, for example.

Lack of time also prevents an analysis of the effect of curbed premium writings on the surplus. The decrease of premium writings would, of course, be a balancing item to a decrease in investment earnings, and as the two economically run hand-in-hand, it is safe to assume that they will occur somewhat simultaneously in the future.

IV. As to the manner of setting up the investment contingency, reserve, several practical methods suggest themselves. First, to set up an extra liability item, calling it a contingency reserve; Second, to load the loss reserves by the desired amount; Third, not to take credit or full credit for appreciation of invested assets and at the same time set up a liability contingent reserve to offset an interest rate decrement.

All three of these methods are in use by many of the larger casualty companies, but to what extent the last two have been applied it is difficult to ascertain. The results do not appear directly in the statement and the companies are not anxious to disclose the amounts by which their loss reserves have been loaded. The first method has already been considered.

A great diversity of opinion exists among casualty executives as to which method of setting up a contingency reserve is the best. The writer is led to believe that a combination of the three methods might be a good policy for a company to follow as this detracts from the merits of none and has the advantages of all. But as this procedure would of necessity distort the underwriting figures, rendering them well-nigh useless for comparative purposes, perhaps the best method is a single contingency reserve of sufficient amount.

Finally, it is hoped that the investment features of the casualty business will be more openly considered by actuaries and statisticians in general and that a scientific and conservative investment policy will become as much a matter of practical interest to the statistician of the company as are reserves and rates at the present time.

PRESENT STATUS OF RESERVES ON NON-CANCELLABLE
DISABILITY INSURANCE*

The following comments will relate primarily to the present status of the reserve requirements of state insurance departments. At the present time the departmental requirements consist largely, if not entirely, of the requirements of the New York Insurance Department. The other state insurance departments have not yet actively interested themselves in the subject.

A clear understanding of the present situation will require some knowledge of the history of the development of reserve requirements.

It should be said to the credit of the companies that they interested themselves in the subject of reserves before the insurance departments began any investigation. On July 8, 1920, the Bureau of Personal Accident and Health Underwriters appointed a committee to consider the whole question of Non-Cancellable insurance and render a report at the next meeting. The Revised Joint Report of the Underwriting and Actuarial Committees on Non-Cancellable Disability Insurance was submitted to the Bureau of Personal Accident and Health Underwriters in June, 1921. This report recommended the so-called Cammack's tables for net premiums and reserves. These tables are contained in a paper which was submitted to the Casualty Actuarial Society by Mr. E. E. Cammack earlier in 1921. (*Proceedings*, Vol. VII, Page 267).

In May, 1922, the Committee on Blanks of the National Convention of Insurance Commissioners appointed a Sub-Committee to make a report on the question of the proper treatment of special reserves for deferred losses under Non-Cancellable Accident and Health policies. This Sub-Committee made its report under date of March 22, 1924.

This Sub-Committee recommended, among other things, that the companies be requested to test the Accident and Sickness tables which had been suggested as the proper reserve standards, on the basis of their actual experience under Non-Cancellable Disability policies; that if no one of the proposed tables be found satisfactory the companies be requested to compile a table showing sickness experience under Non-Cancellable contracts;

*This article was prepared by Mr. Grady H. Hipp and was presented at the November 1927 Meeting of the Society.

that each company be required to set up, in addition to a reserve for incurred deferred claims under Non-Cancellable policies a net premium reserve upon the basis which it believes adequate; that the companies be given to understand clearly that Insurance Departments expect each of them to calculate and set up reserve liabilities in accordance with their best available information; that it seems clear that reserves based on Hunter's disability table are not adequate for Non-Cancellable Disability benefits; that the companies prepare for the time when they will be required to set up reserve liabilities calculated in accordance with prescribed standards, which will be as soon as experience demonstrates what table is satisfactory as a minimum standard. The Sub-Committee clearly recognized that the reserve problem is not easy of solution. They stated that the reserve standards should not be fixed at such a high level as to strangle the business, but at the same time the companies should be required to maintain reserves which are adequate and which accordingly will not imperil the future safety and protection of the policyholders.

It would seem that the companies generally either did not hear of the 1924 report of the above Sub-Committee, or else they did not take it very seriously.

During 1925 the New York Insurance Department actively tackled the question of reserve requirements for Non-Cancellable Disability policies. Letters were written to the companies with Non-Cancellable Disability insurance outstanding, in which their particular attention was called to Recommendations Nos. 2 and 6 of the 1924 Report of the Sub-Committee of the National Convention of Insurance Commissioners. It was pointed out that Section 93, New York Insurance Law, provides that the Superintendent of Insurance shall make annual valuations of Non-Cancellable Health policies. The companies were advised that, accordingly, it would be necessary for them to submit to the New York Department policy returns and other data necessary for valuing their Non-Cancellable Disability policies, but that in lieu of submitting such returns valuation certificates from their home state Insurance Departments would be acceptable. The companies were also advised that in view of the recommendations of the Sub-Committee this Department must insist that the reserves be higher than those based on Hunter's disability tables.

The New York Department's correspondence with the individ-

ual companies indicated the advisability of issuing a circular letter. Accordingly, such a letter was issued under date of March 2, 1926, in which minimum reserves on both active and disabled lives are prescribed. The minimum reserves on active lives were the reserves based on Hunter's table increased, in case of waiting periods of less than six months, in such a manner as the companies' calculations justify, to cover the cost of disability of less than six months' duration. The minimum claim reserves were the reserves based on Hunter's table of mortality among disabled lives, with the exception that a reserve equivalent to the prospective claim payments for one year to all policyholders disabled for less than one year was acceptable.

The question of reserves on Non-Cancellable Disability policies was given further consideration by the New York Department during 1926.

The Pacific Mutual Life Insurance Company submitted tables showing its experience on both active and disabled lives. This experience clearly indicated that their rate of sickness increases materially with attained age and that the benefit of selection is a factor of considerable importance. The Department concluded that there would not be sufficient data left for the compilation of a reliable ultimate disability experience table if the earlier policy years should be eliminated. The data, however, was of considerable value in testing out proposed reserve basis.

On November 29, 1926, the New York Department tentatively prescribed bases for calculating reserves on both active and disabled lives for the purpose of discussion at a hearing held on December 8, 1926. The tentative reserve bases were prescribed after giving careful consideration to the experience of the Pacific Mutual Life and of the Equitable Life Assurance Society. At the public hearing on December 8, 1926, it appeared that, with certain minor changes, the tentative reserve bases would be generally satisfactory to the representatives of all the companies interested in the subject.

On December 18, 1926, the New York Department issued a circular letter prescribing the bases for reserves on both active and disabled lives. The minimum reserves on active lives are the same as prescribed in this Department's circular letter of March 2, 1926, namely, reserves based on Hunter's table, increased, in case of waiting periods of less than six months, in such manner as

the companies' calculations justify, to cover the cost of disability of less than six months' duration. The claim reserves are to be based on Hunter's table of mortality among disabled lives, with the exception that in case the period between the date of disability and the date of valuation is less than 27 months the reserves shall be equivalent to the prospective payments for a period three and one-half times as long as this period of disability (or Hunter's reserve, whichever is the smaller), provided that in no case shall the reserve be less than the equivalent of seven weeks' claim payments. It was pointed out that the rule for calculating reserves on disabled lives does not cover mere notices of claims, resisted claims, other reported claims in connection with which the company does not yet have any means of determining whether or not it is actually liable, or claims incurred but not yet reported. It was stated that reserves should be set up on such notices and claims in such a manner as the companies' calculations justify.

The above rule prescribed for calculating reserves on disabled lives automatically takes care of claims with varying waiting periods. The period of 27 months, referred to in the ruling, was chosen because it was found that at the assumed average age of disabled policyholders the reserve factors would graduate smoothly into the factors on Hunter's disabled lives table at the end of such period.

The maximum rate of interest prescribed for all reserve calculations was $3\frac{1}{2}\%$.

The New York Department is pleased with the results of the rulings prescribing minimum reserves on both active and disabled lives. It is probable that changes will be made in the reserve bases if reliable experience brought out by a later investigation should indicate the desirability of such action.

The New York Department's circular letter of December 18, 1926, emphasized the fact that the reserve bases mentioned were prescribed as minimum standards and that the experience of many companies would doubtless require that they set up reserves in excess of the prescribed minimum. A number of companies are maintaining reserves in excess of the minimum prescribed by this Department.

The New York Department has made an exception to the above rulings in the case of Non-Cancellable contracts under

which the indemnity is limited to a fixed number of weeks, such as 60, in the aggregate, for one or more disabilities. This Department has accepted valuations of such classes of contracts on the basis of the company's own experience. Claim reserves on such contracts were accepted as calculated on the basis of the following rule:

Claim reserves equivalent to the prospective payments for a period

(a) Equal to the period between the date of disability and the date of valuation, or

(b) One-half as long as the period between the date of valuation and the date when 60 weeks (or other maximum aggregate number of weeks) would expire, whichever is the smaller:

provided that, in no event, shall the reserve be less than 3 weeks' benefits for claims of less than 4 weeks' duration, nor greater than 15 weeks' benefits. The exception made in the case of the claim reserves for such special contracts appears to be warranted on the basis of the experience of the Pacific Mutual Life, as previously submitted to this Department.

The activities of the New York Department in prescribing minimum reserve standards for Non-Cancellable Disability contracts and in enforcing such standards, has resulted in great good to the business and has steered at least one company clear of the rocks of disaster.

While the present status of reserve requirements is satisfactory, it would seem desirable and perhaps urgent for the companies to make further investigation of their experience within the next few years.

During 1927 the Sub-Committee of the Committee on Blanks of the National Convention of Insurance Commissioners gave consideration to a proposed investigation of the claim experience of Accident and Health companies under Life Indemnity claims. It was the thought of the Sub-Committee that the first step in investigating reserve standards should be the compilation of a table which could be satisfactorily used in valuing Life Indemnity claims. After taking the matter up with a number of representative companies the Sub-Committee discovered that apparently many of the companies have not kept their records in such shape as to give the desired information and in many cases the records

of the early years have been destroyed. The Sub-Committee reluctantly concluded that it was quite probable that the amount of experience available at the present time is not sufficiently large to give results which would be as dependable as was desired. The proposed investigation was therefore postponed for the time being. The Sub-Committee expressed the hope that the companies would keep their records so arranged that they could easily give the data necessary for a compilation of a table covering experience on the Life Indemnity claims. It would appear that a more desirable procedure would be for some central bureau of the companies to receive and tabulate, during the next five to ten years, all of the experience of the companies under Life Indemnity claims arising under all forms of contracts, both Cancellable and Non-Cancellable; the claims arising under various forms of Non-Cancellable contracts; and the Disability experience among active lives under Non-Cancellable contracts.

The need of compiling the experience of the companies under various classes of Disability contracts on both Non-Cancellable and Cancellable plans constitutes a challenge to the companies.

The present status of reserves on Non-Cancellable Disability insurance may be summarized as follows: The reserve bases prescribed by the New York Insurance Department on December 18, 1926, for both active and disabled lives appear to be reasonably satisfactory, for the time being at least. Such reserve requirements will not stifle the business, and at the same time the future safety and protection of the policyholders are reasonably assured.

In the meantime the companies should make arrangements for compiling their experience on both active and disabled lives under Non-Cancellable Disability contracts.

AMERICAN AND GERMAN INSURANCE METHODS —A COMPARISON*

After studying German insurance for twenty-five years by personal experience, and being thoroughly familiar with American insurance literature, including many valuable periodicals, and twice visiting the United States, I think it of great interest and

*This article by Professor Dr. Alfred Manes, President of the German Society of Insurance Science appeared originally in the September 15, 1927 issue of the *Spectator* and is reprinted by special permission of the publishers.

value to American and German insurance men to hear the opinion of theoretical observers on the insurance methods of the two countries.

Traveling around over the world and studying insurance in all countries, I am sure that a comparison of no other two countries would be as interesting. In the one country, just as in the other, insurance is of the greatest importance to the whole economic life. Furthermore, the situation of the two countries is similar insofar as both in the United States and in Germany there are many commonwealths put together in one Republic. Just as there are similarities, however, there are many differences.

One of the most important points for insurance management is supervision, a unique consideration for the German Republic. In the United States there are forty-eight sets of laws. That reminds a German of a past period, because only twenty-five years ago we also had many insurance laws, if not forty-eight at least about twenty-four sets of laws. It was no small work to effect unification of the insurance laws, because, just as in the United States, in Germany there are many people opposing every effort toward any unification, be it legislation or something else. Despite this the German insurance world, besides many other parts of the population, feels absolutely happy to have only one law instead of many laws, to have only one supervising office instead of a large number of them. It makes the business easier and it makes for cheaper insurance policies. It is more economical for the whole community, and there is nobody in Germany who would like to put away the one insurance law and change it for a majority of laws, such as are in existence in the United States.

Points of Difference

There are many requirements of the American and German insurance laws showing the same principles, but there are also a lot of different rules for the United States. We do not have State supervision on all branches of insurance without exception, as in the American style. There is no German State supervision on marine insurance and reinsurance companies. The legal viewpoint takes it that in marine insurance and reinsurance there are always two parties, the one just as expert in insurance as the other one, so they do not need the protection of insurance

superintendents. Whereas the American insurance laws contain a mixture of administrative law and private law, German legislation combines the two but treats each one separately so that we have insurance supervision law and insurance contract law. There is no supervision in Germany over agents and brokers, and we do not know state regulation of insurance premiums at all.

One of the most important differences between American and German insurance is the fact that in the United States nearly all insurance is business done by private companies, whereas in Germany, besides the insurance business as such there is also a social insurance system covering health, accident, old age, disability, motherhood, burial and unemployment, insurance of workmen and employees, administered not by private companies in a business-like manner, but by many different institutions, ordered by compulsory law.

Insurance of Workmen

One might say that German organizations for workmen's compensation accident insurance are mutual employers' associations. The organizations for other social insurance are mutual associations in which representatives of employers and employees or workmen are combined. One cannot tell but that this compulsory insurance has been a check against private insurance business. There are statistics available showing the contrary, and indicating that since Germany introduced social insurance by compulsory law about 44 years ago, there has also been a steady progress of the insurance business, until nearly the whole of insurance passed away through the inflation of the German currency. However, as I wrote in the *Spectator* some months ago, all is growing up in a surprisingly quick manner since the stabilization of the Mark.

Without any doubt, the controversy about compulsory workmen's insurance has been settled I think, through the last meeting of the International Labor Conference of the League of Nations, held this year at Geneva. There, most countries agreed to a very important program, recommending at least the health insurance. The mentality of the average American is other than that of the average man in other countries, so that perhaps American insurance, as it is today, is the best method of indemnity for the American living today.

Contrasts in Coverage.

If you take the number of policies or the total sum in life insurance or in fire insurance or in any other branch, American insurance business shows much higher figures than the German, the American population being more than 110 million people, the German people aggregating about 62 million souls. American wealth is many times more than that of Germany. Taking the percentage of population insured in any kind of insurance, the United States and Germany, I think, have nearly the same ratio, if one includes for Germany the voluntary private life insurance and the old age compulsory social insurance on the one side, the American life and industrial insurance on the other side. That shows what immense effort American insurance managers and insurance agents have made. It shows that perhaps it is easier to evade the command of law than to evade an insurance agent. Certainly the quality of the insured population in the United States and in Germany differs very much. The American method is certainly the best one for people who have money to pay their own premiums, the German method may be the best for all other people.

Looking over the insurance business in general and its relation to the population, I think the impression is that in America a man is paying for insurance policies as necessities of life and as good investments for capital, while in Germany insurance, so far as it is not compulsory, is very often looked upon as a luxury of life. Besides that fact, the American is in the position to get more earnings than he needs for food, clothing and rent, whereas the greater part of the German people has not yet made money enough for any of these prime requisites.

Effect of Conditions.

The economic condition of Germany has had the effect of more and more centralizing insurance business and developing it so that a few insurance concerns are underwriting the major portion of the total number of policies. The multiple-company German insurance concern is not what America knows as an "insurance fleet," including a number of companies all, or nearly all, dealing with the same kinds of insurance and reinsuring said other. The German concern of similar composition includes companies handling many or all branches of insurance, so that you might

call it a warehouse in which you are getting all articles of insurance; whereas most American insurance "fleets" may be likened to an individual shop. The German law permits a more comprehensive combination of many branches of insurance. On the other hand, there is much more centralization in American insurance insofar as there are many associates doing work which, in Germany, is carried out by each company for itself.

Special Inquiry.

A special inquiry on the association of insurance companies in the United States and in Germany may give much information to both and perhaps guide to important corrections here and there.

It is a great pity that there is nothing in the world for the insurance business proper like the social insurance section of the League of Nations in the National Labor Office at Geneva, where social insurance of nearly all States is brought together.

I should be very proud if, as a result of consideration of this article, American insurance men, the most successful, would organize an international meeting of the leading insurance men of all branches to discuss the most important problems, because I have learned by my traveling through different countries that an exchange of national ideas is always instructive and valuable.

United States Lacks Central Organization.

In one direction, Germany shows a centralization which I am very sorry the United States of America is missing. That is, a centralization of scientific insurance men. Just as different branches of insurance are running along side of each other; and as the associations of the different branches are not combined in a great centralized organization, so it is with all the valuable scientific insurance work of America. The actuaries, perhaps the best organized experts, are not in touch with the insurance economists or lawyers or doctors. All these people, so far as they have to do with life insurance, are not in touch with the people who have to do with fire insurance or marine insurance or workmen's compensation insurance.

Combinations of Insurance Scientists.

We have experimented in Germany, through the German Society of Insurance Science, by combining all the people who

are insurance men and are interested in insurance from a scientific point of view, so that more than 1500 practical and theoretical insurance men are members of the Society, which is now 27 years old and has been under my management for 25 years.

That the underlying idea of this Society, which may appear a revolutionary one to the American actuary or American insurance expert, has been correct, is shown by the fact that not only Germans became members (as was the purpose in starting the Society) but insurance men from not less than 35 other countries asked to become members. About 450 insurance companies, not only in Germany, but from nearly all other European countries, from Argentina, from other South American States and from Japan became members. The United States too is represented, first by the Metropolitan Life Insurance Company, and all the members are receiving the periodical and other publications of the Society which, though originating in Germany, may be considered as the most truly international insurance organization in the world.

PROBLEMS OF UNDERWRITING CONSIDERED*

Accident and health insurance has not reached a stage in its evolution as advanced as either fire insurance or life insurance. It is not so old as these lines. No uniform policy contract has been evolved. It deals with no medically selected group of policyholders. It indemnifies for no certain contingency such as death, and in contrast with life insurance, the indemnities themselves may vary greatly under identical contracts and for the same disabilities, depending upon the adjustment policy of the writing company. This the life insurance companies quickly discovered when they began to write the disability clause and found that the rates of disability for exactly the same disability clause varied as much as 100 per cent among different companies. It insures against loss of income, which, to the eye of the company at least, is much less tangible than the physical property

*This article by Mr. W. G. Alpaugh, Vice-President and Secretary of the Inter-Ocean Casualty Company appeared in the September 19, 1927 issue of *The National Underwriter*.

insured by the fire insurance company. All these factors have a very direct bearing upon the underwriting in this field.

Companies Jealously Guarded Their Underwriting Knowledge.

Just as in the fire field, the accident and health companies until very recently have jealously guarded their own underwriting knowledge and even their loss experience so that the only way one might know something of the accumulated knowledge in this field was to enter the employ of one of the older companies and absorb the knowledge from daily contact with the problem of handling applications and deciding on operating policies. And even with the progressive step which we have taken in our Conference, that of pooling our loss experience, we have found that there remains the very distinct problem of applying the composite result to the underwriting in our own companies. In laying the underwriting foundation then for company success the present day underwriter must depend largely upon the knowledge which he has gained from contact with the business itself. While this is true of all classes of the insurance business, it is more especially true of the casualty lines and particularly accident and health. Although there is certain underwriting knowledge which is fundamental to our business and generally used, yet there is no "cut and dried" procedure that may be followed due to the multiplicity of underwriting problems to be solved by each individual company.

The application examiner becomes a veritable key to successful underwriting. He must carry out the policies of the officers of the company and by final results prove to them his underwriting ability. He must devise ways and means to accept most of the business offered by the agents of the company without involving himself in difficulties with the claim adjusters of his company. He has to satisfy several groups whose interests frequently conflict. The agent requests special consideration on certain applications, for business or personal reasons. In making his decision the examiner must be fair and considerate of this man in the field and at the same time sufficiently safeguard his company against excessive loss. The examiner is asked almost daily to pass an application on one who is over age, over or underweight or one whose history would not justify acceptance for disability protection.

Application is used as Basis for Decision.

The application itself is the basis used by the examiner in making his decision. For the risk inherent in the person applying for insurance, the application gives information on sex, age, weight, height, color, past medical history and present physical condition. Experience has taught that the female risk is more hazardous on a combination health and accident policy than the male. This necessitates an increase in the premium to overcome the difference in hazard. The age of an applicant has a bearing as to insurability and also affects the premium charge. There is no uniformity in acceptance practices and premium increases for different ages, yet it is a known fact that above certain ages risks while still insurable become so hazardous as to necessitate an increase in premium if the coverage is to be granted at all. Experience has demonstrated that beyond certain ages complete disability protection may not be granted although it is possible to grant accident coverage alone. Weight and height are determining factors as to insurability. Definite tables as to over and under-weight supply the needed information on this subject and experience has taught that it is advisable to follow closely these tables in the acceptance of business.

Race and Nationality Have Important Bearing.

Among the risks inherent in the person of the applicant may be those of race and nationality. It is well established that the Negro risk is more hazardous than the white engaged in the same occupation. Companies have discovered through experience the definite kind of policy contract which may be written successfully on Negro risks and it is one fundamental that monthly indemnities on these risks must be kept low. Some companies at least have determined from their own experience that they cannot profitably insure those who have come to the United States from certain foreign countries. This does not mean that it would not be possible to devise a policy and an underwriting plan for profitably covering those belonging to these nationalities, but it does mean that many companies have decided that the problems are such that for them at least, it is not worth while attempting to solve these problems.

Medical History of Applicant is Important.

The risk inherent in the applicant may be shown not only by facts about the risk but by the medical history of the risk.

All health and accident insurance (with the exception of non-cancellable and a few special health contracts) is issued without a medical examination. Thus it becomes necessary to receive information from the applicant as to his past medical history and his present physical condition. Warranties on these points take the place of a medical examination and in a large measure determine the insurability of the risk. Where the application forms a part of the policy contract, any intentional misstatement that would materially affect the risk renders the policy void. In considering medical history and present physical condition, the application examiner may be guided by publications discussing this subject. But the man who has had experience in passing upon applications and who works in conjunction with the adjusting department, is in better position to judge as to the acceptance or rejection of such business than one who would follow the hard and fast statements expressed in these medical reference books. And while it is essential that the person passing upon applications have this rather fundamental medical knowledge, it is also advisable that upon unusual cases about which there is a question of uncertainty, the services of a medical examiner for consulting purposes be available.

Risk of Occupation Must be Considered.

After considering the risk inherent in the person of the applicant, the application examiner must consider the risk of occupation. Here the examiner has for his guidance a very comprehensive manual. Were it not for the human element as manifested by the applicant and the agent, there would be little difficulty in determining the correct classification of a risk from this manual. But from the very beginning, this human element offers complications. First, the applicant himself is not likely to expose freely any hazardous duties which he performs. And the agents, even the honest and careful agents, are inclined to give the applicant the benefit of any doubt as to occupational classification. These difficulties appear in dealing with the trained agent. No amount of underwriting effort at the home office can completely eliminate the detrimental effects resulting from the untrained agent's lack of knowledge concerning the correct use of the manual and the principles involved in correct classification of risks. It is possible, however, to correct the unintentional

errors on the part of a new or untrained agent provided he desires to be fair with his company and work to the interest of all concerned. The home office must endeavor to acquaint him thoroughly with the knowledge necessary to become proficient in interpreting the manual.

Other Factors may Affect Hazards of Occupation.

Assuming that the agent has been careful in classifying the applicant from the manual, it is still necessary for the examiner to exercise judgment as to acceptance of the risk. Thus, an occupation may not be hazardous on account of the duties which it involves but because of the associations sometimes connected with it. Proprietors and attendants in soft drinks parlors and poolrooms are sometimes employed where associations are not productive of unusual danger but some of you may know that some of these proprietors and attendants sometimes violate the 18th amendment and come in contact with characters who terminate life deliberately but in a way which the courts tell us is accidental, so far as our policies are concerned. Thus it has seemed that while the occupational risk may seem to be automatically solved by a manual, yet even here, there is range for use of the examiner's special underwriting knowledge and experience.

Companies long ago discovered that in addition to the risk inherent in the applicant and the risk of occupation, there was also a risk of location. Companies sometimes find it impossible to operate profitably in certain territories. Sometimes the territory may be of large area; sometimes it is a single town or even a single portion of the town. The examiner must know from the underwriting experience of his company where the risk of location bar acceptance of the applicant as a policyholder.

Moral Hazard Must be Considered by Examiner.

Finally there is the moral hazard which is induced by the risk or from an outside source over which he has no control. Here the examiner must depend largely upon the agent or upon an inspection report ordered after receiving the application itself. The application itself will not often disclose the moral hazard. To detect conditions affecting this hazard, or any hazard not apparent in the application, companies are more frequently

turning to inspection of the applicant by companies making a specialty of this business. In determining whether to have an inspection made, they may consider the character of policy to be issued, the amount of weekly or monthly indemnities desired and the agent writing the business. Those policies which contain provisions providing that the policy is non-cancellable by the company during the term for which it is originally issued or during any term for which it may be renewed would be issued in many cases only after an inspection of the applicants. Our own statistics show that upon policies providing for indemnities in excess of \$100 monthly for total disability, the loss ratio is much higher than where the indemnities are below this amount. Other companies have had similar experience and this leads to the making of an inspection on all applicants applying for \$100 or more monthly indemnity. Applicants written by agents whose business is of a questionable nature should all be inspected regardless of the indemnities involved or the character of policy to be issued.

In addition to the risk which may be gauged from the application itself, the underwriter must always bear in mind the source of the application. He will soon know the type of agents from whom he is receiving applications. Some are exceedingly careful. Some are honest but extremely careless. Some are good salesmen but not so good at filling out the application blank. Some take a pride in establishing and maintaining a low loss ratio; others never give a thought to it. The source of the business then also becomes a factor determining the examiner's final action.

PERSONAL NOTES

Dr. David Heron, Secretary and Chief Statistician of the London Guarantee & Accident Co., Ltd., in London, England, has been elected a member of the International Statistical Institute.

Leonard W. Hatch, formerly Director of the Bureau of Statistics and Information, New York State Department of Labor, is now a member of the New York State Industrial Board in New York City.

Norton E. Masterson is now Actuary of the Hardware Mutual Casualty Co. in Stevens Point, Wisconsin.

Edwin W. Kopf, Assistant Statistician of the Metropolitan Life Insurance Co. in New York City has been elected a Fellow

of the Royal Statistical Society of London, England and a *Membre Titulaire* of the Statistical Society of Paris, France.

Robert J. Sullivan has been elected Vice-President of The Travelers Insurance Co. in Hartford.

Howard G. Crane is now Assistant Comptroller of the General Reinsurance Corporation in New York City.

John S. Thompson is now Vice-President and Mathematician of the Mutual Benefit Life Insurance Co. in Newark.

John C. Montgomery, previously Assistant Treasurer of the Utilities Mutual Insurance Co. is now Assistant Secretary and Assistant Treasurer of the Bankers' Indemnity Insurance Co. in Newark.

Alan W. Waite is now Chief Underwriter of the Accident and Liability Department of the Aetna Life Insurance Co. in Hartford.

John L. Milne is now Actuary of the Presbyterian Ministers' Fund for Life Insurance in Philadelphia.

James J. Watson, formerly Assistant Secretary and Business Administrator of the Michigan Mutual Liability Co. is now Vice-President and General Manager of the 'Traders' and General Insurance Co. in Dallas.

Charles H. Franklin is now Secretary of the Continental Casualty Co. in Chicago.

George P. Welch, previously Statistician of Goodwin-Beach & Co. is now Statistician of Fuller, Richter, Aldrich & Co. in Hartford.

Robert K. Orr is now President of the Wolverine Insurance Co. in Lansing.

Joseph P. Gibson, Jr., formerly Manager of the Illinois Agricultural Mutual Insurance Co. is now Assistant General Manager of the Builders and Manufacturers Mutual Casualty Co. in Chicago.

Joseph P. Moore is now President of the North American Accident Insurance Co. in Montreal.

Earl H. Nicholson has left the Lincoln National Life Insurance Co. and is Assistant Actuary of the Inter-Southern Life Insurance Co. in Louisville.

Arthur G. Smith is now Treasurer and Actuary of the Compensation Inspection Rating Board in New York City.

William F. Somerville is now Actuary and Underwriter of the Anchor Casualty Co. in St. Paul.

Guido Toja is now Professor of Financial and Actuarial Mathematics at the University of Florence in Florence, Italy.

LEGAL NOTES

BY

SAUL B. ACKERMAN
(OF THE NEW YORK BAR)

ACCIDENT

INTERPRETATION OF UNAMBIGUOUS POLICY.

Plaintiff's wife secured an accident insurance policy from defendant insuring against bodily injury, among other things caused by the burning of a building while therein.

The facts were that linoleum merely laid on the kitchen floor caught fire which was communicated to the clothes of the insured whereby she suffered injuries causing her death. The origin of the fire was unknown. As linoleum was held to be personalty and merely contained in the building, there was no burning of the building itself which caused the injury. The policy was unambiguous in this particular respect, hence the plaintiff was not entitled to the benefit of interpretation most favorable to him, as no interpretation was needed. Judgment for the defendant company was affirmed. (*Arnold vs. Travelers Ins. Co. of Hartford, Conn.*, 136 Atlantic Reporter 690.)

ACT OF INSANE PERSON.

The accident policy which was the basis of this action contained a clause which excepted any injury resulting from an intentional act of the insured or any other person. The insured who was serving as a flagman on a passenger train was shot and killed by a passenger, who became suddenly enraged on account of an imaginary wrong. The jury found that the man was insane and violently so at the time he committed the murder.

Among other things the insurance company contended that regardless of whether the injury was inflicted by a sane person the above mentioned exception was intended to exclude recovery for an injury caused by an intentional act of any person. This contention was held to be unsound on the principle that one must be sane or rational before he can be capable of intentionally committing an act, therefore the act must be that of a rational person.

The judgment for the plaintiff was therefore affirmed. (*Provident Life & Accident Ins. Co. vs. McWilliams*, 112 Southern Reporter 483.)

PROXIMATE CAUSE OF INJURY.

A policy of accident insurance was issued by defendant company, whereby the deceased was insured against death from bodily injuries effected by external, violent and accidental means. For an additional premium, an "automobile endorsement" was attached to the policy, and provided for the payment of an additional sum in the event that the death or injuries covered by the policy itself resulted from an accident occurring while the insured was riding in, operating or caring for a private automobile.

The insured while riding in a private automobile, descending a steep mountain grade, either leaped or was thrown out of the car when it got out of the control of the driver. The driver shortly thereafter regained control of the car but the assured was found lying in the road suffering with severe injuries from which he died.

The contention of the defendant was that no accident occurred while the insured was riding in an automobile and therefore that the plaintiff, widow of the insured, was not entitled to recover the additional amount under the "automobile endorsement."

No exception was made in the endorsement to this particular situation, *i. e.*, where the insured was injured by jumping from an automobile running wild, yet there were four exceptions in all which seem to have been given some weight. Hence, if reasonable men could reasonably contend that the policy applied to and covered such a situation although susceptible to different interpretations, that one most favorable to the assured would be taken.

Further, whether the insured was thrown from the car, leaped therefrom in fright of his sudden peril, or to save himself, the insured's death was due to the automobile getting beyond the control of the driver and such getting out of control was within the liability assumed by the insurers under the "automobile endorsement." (*Wright vs. Aetna Life Ins. Co.*, 17 Fed. Rep. (2nd) 596.)

AUTOMOBILE

AGE OF DRIVER—WHEN IMMATERIAL.

This is a claim by the insurer against the insured for damages done by a young boy under the minimum age limit for drivers named in the policy. It was shown that the owner of the truck had taken due care in employing an experienced chauffeur.

The latter had left the truck to perform some errands leaving the young boy on the truck to guard its contents. Somebody told the boy to move the truck, but he being unable to stop it, smashed into a building along the street. The owner of the building recovered a judgment from the owner of the truck, the insured under this policy.

The Court held that the boy had no authority either from the driver or owner of the truck to move it. Hence the owner is no more liable to the payment of damages caused by its unauthorized movement nor the insurance company any less liable than if the truck had been accidentally started by some other car bumping against it and the damage thereby caused. In other words the truck was being operated by the driver within the terms of the policy and the carrier was therefore liable. (*Aetna Casualty & Surety Co. vs. Etoch*, 295 S. W. Rep. 376.)

SERVICE ON NON-RESIDENT.

Laws passed by various states authorizing service on non-resident motorists by delivery of process to a particular officer have been questioned as being in contravention of the "due process" clause, (Art. 4, para. 2) of the Constitution. In the foregoing action process was delivered to the registrar of the state of Massachusetts as authorized by such a law.

Judgment in support of the law and jurisdiction was appealed to the Supreme Court of the United States.

The premises on which the judgment was affirmed were that in the public interest the state may make and enforce regulations reasonably calculated to promote care on the part of all, residents and non-residents alike, on its highways, that use of the highway is the equivalent of the appointment of the registrar as agent by a non-resident on whom process may be served, and that the difference between formal and implied appointment is not substantial so far as concerns the application of the due process clause of the constitution. (*Hess vs. Pawloski*, 47 Sup. Ct. Rep. 632.)

WORKMEN'S COMPENSATION

DEPENDENCY.

The employee was the father of two children by his first wife. He had been divorced from his first wife, and the custody of the children was awarded to the wife. The decree of divorce

required that the husband pay a certain amount monthly for the support of the two minor children. The husband had avoided these payments, and had evaded arrest in connection with his nonpayment. He had assumed another name and married, and had more or less completely removed himself from past associations.

This man having been killed while an employee, the Industrial Commission had granted an award to these minor children which is now contested on appeal. The award to the minor children was under a statute providing for children and using the word "dependent". The Supreme Court of Arizona reversed the award granted by the Industrial Commission on the ground that it had not been shown as a matter of fact that these children were dependent upon the deceased employee. The Industrial Commission had disposed of the question of dependency on the basis that the employee was legally liable for the support of the children. The Appellate Court held that dependency in fact must be shown, and even though there is no actual support, a reasonable probability of support would be sufficient. (*Ocean Accident and Guarantee Corporation, Limited vs. Industrial Commission of Arizona*, 255 Pacific 598.)

VIOLATION OF LAW.

The employee in this case was a miner and was killed by an explosion in a mine. The explosion was caused when this miner lit a fuse with a match.

By a statute of Pennsylvania, it is prohibited to use or strike matches in a mine. The Compensation Board denied an award. The Supreme Court of Pennsylvania affirmed this denial on the ground that the miner, having violated the statute, was at that moment not in the employ of the mining company. (*Mizzer vs. Philadelphia and Reading Coal and Iron Co.*, Supreme Court, Pennsylvania, 137 Atlantic 126.)

EMPLOYEE.

The deceased was employed by a mining company as a special agent. His duties required that he see that the peace was kept on company property. At the same time he was a county officer. He was killed while interfering in a fracas outside of a company theatre.

The Kentucky Court of Appeals affirmed the award of the Compensation Board against the employer, holding that death occurred while the deceased was acting in the course of his employment. (*Stearns Coal & Lumber Co. vs. Ball*, Ct. of App. Ky. 291 S. W. 1013.)

MISCELLANEOUS

PUBLIC LIABILITY—ASSIGNMENT.

Amico had a policy insuring him against liability arising out of accidents occurring on certain premises. Amico sold the premises to Falco and there was evidence to the effect that the policy was then in the possession of the insurance company's general agent. There was also evidence to the effect that a written request had been made to transfer the policy to Falco. No refusal of this request was made.

The plaintiff having been injured on the premises obtained a judgment against Falco. The execution was returned unsatisfied and he brought this action against the insurance company.

The jury rendered a verdict in favor of the plaintiff and on appeal the court affirmed the judgment, holding that there was sufficient evidence for the jury to find an implied agreement by the defendant to make the transfer. Since Falco, relying on this representation failed to get other insurance, the insurance company is estopped to claim a forfeiture and to deny the transfer. (*Trugler vs. Zurich General Accident & Liability Ins. Co.*, 223 N. Y. S. 595.)

REINSURANCE CONTRACTS—AMENDMENT TO CONTRACT.

A reinsurance policy was issued by the defendants to the plaintiffs herein which provided that liability of the former should extend from April 1, 1924 to March 31, 1925 and should cover all losses for which plaintiff became liable in excess of specific amounts—on all policies, binders, endorsements, etc., issued by plaintiff during that year.

In this suit plaintiff sought to recover the excess loss on two policies issued before (the accident having occurred subsequently) April 1, 1924, the effective date of the foregoing reinsurance contract.

Two amendments added to the policy sometime after that date and on which plaintiff bases his claim read as follows:

"It is hereby understood and agreed that, for the purposes of the reinsurance * * * the net annual premiums * * * shall be determined by taking the unearned premiums of (plaintiff) as of the inception date of this contract, add thereto the premiums written during the term of the contract, less cancellations and return premiums, and, from the total of these two sums, deduct the unearned premium reserve in force at the expiration or termination of this contract, and the premium rate shall be applied to the net result of this calculation. The effective date of this indorsement shall be April 1, 1924."

"This contract shall take effect at and from 10:00 a. m., April 1, 1924, and shall remain in full force and effect until canceled by either party giving ninety days' notice in writing to the other, stating when thereafter cancellation shall be effective. It is understood and agreed that on the expiration or termination of the contract to which this endorsement is attached, and of which it forms a part, that the liability of the reinsurer on all policies written during the currency of the reinsurance shall immediately terminate and the reinsurer shall be relieved of all further liability for loss except such loss as may arise out of events occurring during the currency of the reinsurance. The insurer may, however, cancel this contract absolutely, on five days' notice for non-payment of premiums due."

The interpretaion of the court was to the effect that neither clause expressed an intention to extend the reinsurance to policies issued prior to April 1st; that although the first clause might be inequitable the court could not make a new contract for the parties; that the second clause applied, primarilly to cancellation and the liability of defendants at such time. (Indemnity Exchange of America *vs.* Security Mutual Casualty Co., 137 Atlantic Reporter 598.)

OBITUARY

WILLIAM YOUNG

1875-1927

William Young died October 23, 1927, at his home in Ridgewood, N. J., at the early age of 52.

Born in Scotland, he received his education and early life insurance training there. He was a Fellow of the Faculty of Actuaries in Scotland, a Fellow of the Actuarial Society of America, a Fellow and charter member of the Casualty Actuarial Society, and a Fellow of the American Institute of Actuaries. Mr. Young served the New York Life Insurance Company for twenty-three years. He entered the employ of that company in 1904, was advanced to Assistant Actuary in 1910, and in 1918 became an Actuary of the company.

His interests being primarily in the field of life insurance, he took an active interest in the affairs of the Actuarial Society of America, and had served as the Editor of its Transactions and the Chairman of its Examination Committee.

Mr. Young was richly endowed mentally; he brought to his daily tasks a keen analytical mind, clearness of thinking, facility of expression, and a great strength of character. He was greatly beloved by everyone with whom he came in contact. He made many friends and kept them. Ranking high in the minds of brother actuaries, skilled in his profession, practical in thought, congenial in association, his loss will be felt by those members of the Casualty Actuarial Society who were privileged to know him.

CASUALTY ACTUARIAL SOCIETY

NOVEMBER 18, 1927

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	EVERETT S. FALLOW.....	1930

*Terms expire at the annual meeting in November, 1928.

†Terms expire at the annual meeting in November of the year given.

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ABSTRACT FROM THE MINUTES OF THE
FOURTEENTH ANNUAL MEETING
NOVEMBER 18, 1927.

The fourteenth annual (twenty-ninth regular) meeting of the Casualty Actuarial Society was held at the Hotel Biltmore, New York, on Friday, November 18, 1927.

President Perkins called the meeting to order at 10:15 A. M. The roll was called showing the following forty-eight Fellows and twenty-seven Associates present:

FELLOWS

BARBER	GRAHAM, T. B.	MOORE, G. D.
BLANCHARD	GREENE	MULLANEY
BREIBY	HAMMOND	NICHOLAS
BROWN, F. S.	HAUGH	PERKINS
BUDLONG	HEATH	PINNEY
COGSWELL	HOBBS	ROEBER
CRAIG	HUGHES	RYAN
DAVIS, E. M.	KELTON	SENIOR
DORWEILER	LESLIE	SMITH, C. G.
DUNLAP	LINDER	TARBELL
ELSTON	MASTERTON	VAN TUYL
FALLOW	MATTHEWS	WHEELER
FONDILLER	MAYCRINK	WHITNEY
GINSBURGH	McMANUS	WOLFE, L. J.
GOULD	MELTZER	WOLFE, S. H.
GRAHAM, C. M.	MICHELbacher	YOUNG, C. N.

ASSOCIATES

BURLING	HULL	SKELDING
BUGBEE	JONES, L. D.	SKILLINGS
COMSTOCK	MARSHALL	SPENCER
CONSTABLE	MILNE	STOKE
FITZGERALD	OVERHOLSER	VALERIUS
FLEMING	PIPER	VOOGT
FULLER	POISSANT	WARREN, C. S.
HALL, L. L.	POWELL	WILLIAMSON
HIPP	SAWYER	WOOD, M. J.

President Perkins read his presidential address.

The minutes of the meeting held May 13, 1927, were approved as printed in the *Proceedings*.

The Secretary-Treasurer read the report of the Council and upon motion it was adopted by the Society. Diplomas had been sent to F. Stuart Brown, Evelyn M. Davis, C. H. Frederickson, and N. E. Masterson, who had been admitted as Fellows under the 1927 examinations. Grady H. Hipp had been enrolled as an Associate without examination. For the fiscal year 1927 only, there is to be an addition of \$1 which was authorized by the Council to provide a fund from which to purchase books for the assistance of students preparing to take the examinations. The memorial notice of William Young appearing in this number was read.

The Council selected the following and recommended to the Society that they be admitted as Fellows without examination under the terms of Article III of the Constitution:—

FRANK J. O'NEILL, President, Royal Indemnity Company, New York City.

EDWARD C. STONE, United States Manager, Employers Liability Assurance Corporation, Boston, Mass.

After ballot these nominees were declared duly elected Fellows.

The Council reported that the following Associates had passed the necessary examinations and had been admitted as Fellows:

F. STUART BROWN	C. H. FREDRICKSON
EVELYN M. DAVIS	N. E. MASTERSON

The Council also reported that the following candidates had passed the necessary examinations and had been enrolled as Associates:

W. H. BURLING	W. A. POISSANT
S. T. CHEN	H. M. SARASON
S. F. CONROD	A. A. SPEERS
A. H. FITZGERALD	N. M. VALERIUS
D. M. JAMISON (Miss)	F. G. WHITBREAD
W. C. GREEN	M. J. WOOD

The reports of the Secretary-Treasurer (Richard Fondiller) and of the Librarian (William Breiby) were read and accepted. The annual report of finances follows:

ANNUAL REPORT OF FINANCES

Cash receipts and disbursements from November 1, 1926, to October 31, 1927.

INCOME

On deposit on Nov. 1, 1926, in Fidelity Trust Company.....		\$ 476.31
Members' Dues.....	\$2,315.00	
Sale of Proceedings.....	1,392.58	
Examination Fees.....	180.00	
Luncheons.....	197.00	
Liberty Loan Coupons.....	42.50	
Woodward Prize.....	50.00	4,177.08
Total.....		\$4,653.39

DISBURSEMENTS

Printing and Stationery.....	\$3,147.06	
Postage, Telegrams and Express.....	145.00	
Secretarial Work.....	360.00	
Luncheons.....	301.20	
Examination Expense.....	216.28	
Miscellaneous.....	51.96	
		\$4,221.50
On deposit on Oct. 31, 1927, in Fidelity Trust Company.....		431.89
Total.....		\$4,653.39

Income.....	\$4,177.08
Disbursements.....	4,221.50

Loss.....	\$ 44.42
1926 Bank Balance.....	476.31

1927 Bank Balance.....	\$ 431.89
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ASSETS

Cash in Bank.....	\$ 431.89
Liberty Loan Bonds.....	1,000.00

Total.....	\$1,431.89
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The Auditing Committee (Harwood E. Ryan, Chairman) reported that the books of the Secretary-Treasurer had been audited and his accounts verified.

The Examination Committee (Sydney D. Pinney, Chairman) submitted a report of which the following is a summary:

1927 EXAMINATIONS—SUCCESSFUL CANDIDATES

The following is a list of those who passed the examinations held by the Society on May 4th and 5th, 1927:

ASSOCIATESHIP—PART I

BURLING, W. H.	SARASON, H. M.
GREEN, W. C.	WHITBREAD, F. G.
POISSANT, W. A.	WOOD, M. J.

ASSOCIATESHIP—PART II

BURLING, W. H.	SARASON, H. M.
CHEN, S. T.	SPEERS, A. A.
CONROD, S. F.	VALERIUS, N. M.
GREEN, W. C.	WHITBREAD, F. G.
POISSANT, W. A.	WOOD, M. J.
PRUITT, D. M.	

FELLOWSHIP—PART I

BARTER, J. L.	JAMISON, D. M. (Miss)
DAVIS, E. M. (Miss)	MARSHALL, R. M.
FITZGERALD, A. H.	MASTERSON, N. E.
FREDERICKSON, C. H.	SKELDING, A. Z.

FELLOWSHIP—PART II

BROWN, F. S.	MASTERSON, N. E.
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The Committee on Papers (Leon S. Senior, Chairman) reported that the Woodward Prize of \$50 for the best paper had been awarded to Paul Dorweiler, a Fellow of the Society, for his paper entitled "Observations on Making Rates for Excess Compensation Insurance" which was printed in *Proceedings* No. 28, Volume XIII.

The report of the Committee on Compensation and Liability Loss Reserves (Benedict D. Flynn, Chairman) was read in full and companies desiring to cooperate with the Committee were requested to write to the Chairman for copies of the report.

The Council's re-election of Robert J. McManus as Editor and William Breiby as Librarian, subject to confirmation by the Society, was announced.

The annual elections were then held and the following officers and members of the Council were declared elected:

<i>President</i>	SANFORD B. PERKINS
<i>Vice President</i>	GEORGE D. MOORE
<i>Vice President</i>	THOMAS F. TARBELL
<i>Secretary-Treasurer</i>	RICHARD FONDILLER
<i>Editor</i>	ROBERT J. McMANUS
<i>Librarian</i>	WILLIAM BREIBY

Members of Council (terms expire in 1930).

ROY A. WHEELER WILLIAM M. CORCORAN EVERETT S. FALLOW

The following topics for which speakers had been selected were then informally discussed:

Present Status of Reserves on Non-Cancellable Disability Insurance.

Coverage of Small Risks for Compensation Insurance.

Provision in Financial Statements for Decline in Prevailing Level of Market Value of Securities.

Aircraft Insurance.

Recess was taken until 2:00 P. M.

By invitation of the Committee on Program Mr. Luther E. Mackall, Vice President, Metropolitan Casualty Insurance Company, addressed the Society on "Instalment Note Guarantees by Surety Companies" and Mr. E. B. McConnell, New York Vice-President and Manager, Maryland Casualty Company, addressed the Society on "Guaranteeing First Mortgage Real Estate Bonds."

The papers printed in this Number were read or presented.

Upon motion, the meeting adjourned at 5:00 P. M.

PROCEEDINGS

MAY 25, 1928

IS THE INDUSTRIAL RATING PLAN A NECESSARY
PART OF THE WORKMEN'S COMPENSATION
RATING STRUCTURE?

PRESIDENTIAL ADDRESS, SANFORD B. PERKINS

The question as to whether the Industrial Compensation Rating Schedule has completely served its purpose as a part of the compensation rating structure and as to whether it would be wise to discontinue it, arises with such increasing frequency that it may be well to review briefly its origin and purpose and to consider the various arguments that may be and are brought to bear on the question of its discontinuance.

Liability and compensation underwriters have recognized since the inception of workmen's compensation insurance that all risks, even of the same classification, do not present the same hazards. Obviously, there was need of a rating instrument for measuring the variation of exposures to hazard between individual plants. A similar situation had been encountered in underwriting fire insurance and had been solved by the development of a rating schedule which imposed charges or allowed credits for the presence of various physical conditions. Admittedly, the application of schedule rating to compensation insurance was borrowed from fire insurance but the idea seems to have occurred to several persons at about the same time and a number of rating schedules were developed independently. The earliest schedule of which we have definite record was the Massachusetts Schedule which was adopted on September 15, 1913.

The idea of adapting schedule rating to compensation insurance which had the most direct bearing and influence in the development of the present Industrial Compensation Rating Schedule seems to have originated on the Pacific coast and with Mr. Carl M. Hansen. In conjunction with Professor Albert W. Whitney, then connected with the Industrial Commission of California, Mr. Hansen drafted a rating schedule which purported to measure

the hazard relationship of one plant to another through a recognition of the operating equipment and the degree of guarding involved in the individual plant. This plan was given the test of actual and practical application by two of the largest compensation writing companies before it was finally adopted in 1914 by other individual insurance carriers and by the New York Board in the form of the Universal Analytic Schedule.

During the period of experimentation and development the Massachusetts Rating and Inspection Bureau appointed a committee of engineers to draw up an improved schedule. The efforts of this committee resulted in a very detailed schedule containing some three hundred items covering different hazards and exposures. While this treatise was too elaborate and was never adopted, it did stir up considerable controversy over the principles involved in schedule rating and led directly to the establishment in 1915 of the Standing Committee on Schedule Rating—a subcommittee of both stock and mutual insurance carriers—to thoroughly study the subject. After due consideration, this committee drew up a revised schedule which was designated as the Industrial Compensation Rating Schedule. This was adopted in New York on July 27, 1916 by the First Conference on Schedule Rating, composed of several independent bureaus and insurance departments.

The Industrial Compensation Rating Schedule of 1916 was not merely the successor to but was the immediate derivative of the Universal Analytic Schedule from which it differed only in details. It comprised a collection of standards of safety for industrial plants to be used as a guide for inspecting and rating such plants for compensation insurance. A standard was set up for nearly every feature of a risk which affected the accident hazard and provided an appropriate modification of the manual rate for the presence or absence of standard conditions. It contributed but one radically new feature which was borrowed from the Massachusetts Schedule—a section devoted to standards for guarding the point of operation of several dangerous machines.

Although originally the Schedule Rating Plan was designed fundamentally as a measure of existing hazard, the increasing emphasis placed upon standards for safeguarding and the continued insistence by compensation insurance carriers for compliance with their recommendations for accident preventive mea-

tures demonstrates that, whether intentionally or as a natural development of the application of scientifically and economically sound principles, the benefits of schedule rating were being extended to the field of elimination of unnecessary and wasteful industrial accidents as such. If for no other reason, the Schedule Rating Plan has well justified its existence.

That the actual rating value of the Industrial Compensation Rating Schedule has not been overlooked, however, is evidenced by subsequent revisions in 1918 and 1922. In the 1918 Schedule the items were rearranged and grouped according to their application to structural hazards, mechanical hazards and plant morale. A distinct effort was made to relate each item to a recognized subdivision in the standard classification of accident causes, thereby permitting subsequent statistical determination of the item values.

Concurrently, or shortly thereafter, the Workmen's Compensation Statistical Plan was adopted by the National Bureau of Casualty and Surety Underwriters and in 1922 there was available detailed information in connection with 340,000 individual accidents. As a result of an analysis of these accident reports, the 1923 Industrial Compensation Rating Schedule was created and incorporated schedule item values which, for the first time, were predicated on actual experience. Many items appearing in the preceding schedule were eliminated as it was found that the physical conditions measured thereby were actually non-accident producing or negligibly so. The 1923 Schedule in its adopted form brought forth considerable criticism as it was generally felt that the elimination of so many items would reduce the incentive for improving working conditions in plants rated thereunder.

As a matter of fact, a new era in the field of schedule rating had arrived. The results of a great educational movement were commencing to be realized. Sound economic arguments of the beneficial results which would accrue to an employer from an earnest and sincere effort to prevent accidents were replacing promises of rate reductions therefor. "Purse reaction" is notoriously more sensitive and more prompt than "sense reaction." Therefore, it was not only scientifically correct to inject the idea of rate modification for physical improvement but it was an excellently good business move. It inspired the very

activities which might more properly have been the result of a clear understanding of the economic advantages of accident prevention. Certainly, in the final analysis, it was to the advantage of all concerned—employers, employees, insurance carriers and the general public represented by the families, friends and relatives of the exposed workmen—that accidents were prevented regardless of the impelling motive. Employers had begun to realize that the actual cost of an industrial accident must be borne in large measure by themselves and could not be assumed by an insurance carrier. True, the carrier could minister to the injured employee and could relieve the employer of all obligations imposed by the workmen's compensation act but the loss in production because of the period of disability of the injured employee, the actual cost of replacing damaged machines or other property, the cost of material destroyed and the actual expense of training a new employee to replace the one injured, would fall on the employer.

Realization of the magnitude of the related and inseparable expenses created by an industrial accident which must be assumed by the employer has evolved what I shall designate as the Four-to-One theory. Simply stated, this holds that for every dollar which an insurance carrier does not have to pay because of an accident prevented, the employer saves four dollars in his production cost, in addition to any credit which he may receive through the application of schedule or experience rating. That this tremendous lesson has always been a goal of the designers and creators of the schedule becomes apparent when consideration is given to the fact that even in the earliest schedule on record a $2\frac{1}{2}\%$ credit was allowed for Safety and Welfare work. That item read:

"Credit where a systematic accident prevention campaign is carried on in the form of safety committees composed of employees, where literature on accident prevention and specific rules and regulations relating to safety are disseminated among employees in languages understood by them, and where efficient means for first aid to injured are provided on the premises."

A further credit of $2\frac{1}{2}\%$ of the base rate was allowed

"Where ample room is provided between machines, aisles kept clear, material piled in an orderly and substantial manner, and where light, sanitation, ventilation and general order and care is good."

Support for the doctrine of credit for a safety organization has never waned despite the fact that it has frequently been charged that credits were being obtained through non-effective skeleton or paper organizations. The advantage and necessity of recognizing the honest and earnest co-operation of an employer with his insurance carrier to reduce industrial accidents are more apparent today than ever before as is testified by the increased ardor, if not numbers, of the supporters of the underlying theory.

Considering for the moment the Schedule Rating Plan as solely a rating instrument, where does it fit into the rating procedure? The classification system has been accepted as axiomatic and, as a first step in arriving at the proper premium rate for an individual risk, appropriate classifications, dependent upon the operations to be insured, must be applied. At this point, the physical differences between risks falling in the same general classification demand recognition, and to the extent to which this is possible the Schedule Rating Plan affords a measure of such manual rate modification. The classifications to which schedule rating is applicable are limited to those involving ratable characteristics such as operating machines. In general, its application is limited to manufacturing operations. Under today's conception a compensation rate is designed to measure the expected compensation cost for the period over which it is to be in effect. As far as a small risk is concerned or any new risk, the only visible evidence that exists to indicate that the hazard to be undertaken varies in any respect from the average hazard of the classification in which the risk falls, is found in the physical condition of its equipment. For such risks the application of the Schedule Rating Plan furnishes the only available means of modifying the manual rate. Schedule rating, then, is of vital importance to risks of this character. However, as operations become larger in their size and scope and have been in existence long enough to have developed an experience under the operation of a workmen's compensation act, additional evidence is made available.

The risk actually assumed by an insurance carrier is measured in terms of dollars expended or likely to be expended in satisfying the obligations imposed upon an employer by the workmen's compensation act effective in his particular state. It must be admitted that if an employer has operated for a period of years under a given set of physical conditions and under the terms of a

compensation act and has developed a compensation cost different from that anticipated by the average classification rate, there is some likelihood that in the future the experience developed by his operations will continue to differ from the average. Therefore, at least to the extent that the actual exposure of his workmen to industrial accidents has permitted the law of averages to operate, he is entitled to a further rate modification in recognition of the actual experience developed under his administration. So, as the size of the risk increases, the value of schedule rating as a final determinant of a rate modification becomes relatively less important and the value of experience in rating becomes correspondingly of greater importance. Consequently, to risks which are of such size that their individual experience possesses evidential value, an Experience Rating Plan is applied. The extent to which experience of an individual risk is permitted to effect the determination of the final adjusted rate for each risk depends upon the volume of the experience of that risk made available for observation.

The principle of experience rating is as axiomatic as the classification system itself. Against experience rating *per se* there can be no convincing argument in any line of casualty insurance because if experience rating can be discredited then the classification system must fall, for classification rating is absolutely nothing but experience rating on a large scale.

A compensation law is enacted. Industrial operations are undertaken and there follow accidents and compensation payments in accordance with the act. These compensation payments may be accumulated in the form of experience and a resulting cost obtained. This cost must be apportioned among the industries embraced by the act. Were the principle of experience rating not to be accepted without reservation, the compensation insurance cost would necessarily have to be spread equally over the various industries. That idea is so preposterous that it is not worthy of a second thought for who but the most radical could conceive of combining in one group for rating purposes manufacturers, contractors, public utilities, commercial enterprises and all others subject to the operation of the various compensation acts. A very natural subsequent step is to segregate the experience by industrial divisions or as it is now understood, by classifications. The degree of refinement at this stage

simply depends upon the number and narrowness of scope of the classification definitions.

If there were to be established a classification reading "Malleable Iron Works—with not less than five hundred employees and producing castings of over 50 pounds", it could be termed a classification but because of the few plants complying with the conditions, it would actually approximate the Experience Rating Plan which is now in vogue, except that the experience of the few plants which would qualify would determine their own rate. So, it was inevitable that in addition to a refinement of rate by industry, the difference between an individual risk and the classification in which it happened to fall should be recognized by some such rating instrument as the Experience Rating Plan.

However, the Experience Rating Plan has its limitations. While theoretically the experience of a risk is the very best measure of the difference between it and other risks embraced by its classification, admittedly, there are certain risks so small that the experience possesses no evidential value and efforts to experience rate such risks would be entirely wasted and the results would have no rating significance. In order to be useful, the experience produced by a given risk must be sufficiently mature as to be accurate. In recognition of this fact the Compensation Experience Rating Plan of today does not make use of the experience developed during the current policy year, that is, the year just preceding the year for which rates are to be established. Therefore, necessary and effective though experience rating may be, it is incomplete, even in conjunction with the existing classification system because at best it only measures, for risks above a certain size, the difference between the characteristics of an individual operation and the average operation embraced by the classification for conditions as they existed during the period for which the experience was examined.

Advances in manufacturing methods are being made continuously; physical characteristics of individual plants can be altered in a very short space of time and with each change the expectation of future experience under the operation of a compensation act is correspondingly altered. Thus, even though throughout its effective range the Experience Rating Plan might be considered as a substitute for, rather than supplementary to, schedule rating, it is necessary to rely again upon schedule rating

as the only available means of measuring prospective changes in the hazard of an individual risk.

A background such as this, sketchy and inadequate though it may be, seemed a necessary prerequisite to a discussion of the various arguments that are offered for and directed against many phases of the Schedule Rating Plan at this time.

It is held by many that the operation of the Schedule Rating Plan is uselessly expensive. It is true that it requires the time of the company inspector both to make rating inspections and to fill out inspection records. Time is required of the home office inspection division to review the reports and to make recommendations. Rating departments of the companies are required to apply the rating plan. In the various rating boards and bureaus there must be taken into consideration the time and expenses of inspectors as well as other employees who check inspection reports, or apply the Schedule Rating Plan. Admittedly, expense is involved. If schedule rating were eliminated entirely, there would doubtless be some saving particularly in the boards and bureaus, but the companies will always operate their engineering and inspection departments, will always make recommendations and they will always ask compliance with suggested accident preventive measures.

It is extremely doubtful whether it would be wise to eliminate schedule rating entirely regardless of the expense involved. For years, company representatives in the field as well as those in the home offices preached to the general public that compliance with engineering recommendations would result in a rate reduction. To such risks as receive the benefit of experience rating, this statement would presumably hold true, if schedule rating were abolished for ultimately, because of compliance with reasonable accident prevention recommendations, the experience of an individual risk would improve so that through the application of experience rating, an assured would receive a rate reduction. But how about the thousands of risks which are not subject to experience rating? Can the companies face the charge of breaking faith with the public? It is easy to talk of the economic advantages of preventing accidents but it is difficult and embarrassing to attempt to explain a breach of promise. There is, in addition, a rightful claim on the part of those who advocate retaining the schedule that it is in the field of small or middle-

sized risks that its most effective rating value is to be found. If this is true and if the schedule is not to be eliminated in its entirety, a saving in expense which will result from a partial elimination of the use of the schedule would be correspondingly reduced and the force of the argument of excessive expense would be minimized.

Lack of flexibility is another argument advanced against the present schedule. While it does measure certain hazards which are normal to the average industry and which have been found to be substantial accident producing causes, it is contended that the same amount of time and money could be expended to better advantage in dealing with the individual characteristics of a risk if inspectors were not limited to the provisions of a set schedule. The obvious answer to this argument is that the efforts of the inspector should not be limited. They should deal with the unique and characteristic accident producing conditions of an individual risk in addition to the so-called schedule items. To be sure, correction of the conditions not listed in the schedule would not be followed by an immediate reduction in rate but elimination of accident producing causes would be accompanied by a substantial saving in expense to the assured as well as by the saving in compensation premium which would result by complying with the recommendations in connection with the schedule items. It is obviously impossible to set a value on every conceivable physical condition that could be found in every plant. It is believed by some that the interest of employers has been stimulated to the point where the schedule is not needed as an incentive for accident prevention. It is contended that the prevention of economic waste is a much more acceptable argument to the employer as an inspiration to adopt safe engineering practices than a rate reduction. This is as it should be but if a rate reduction is warranted by the conditions obtaining in an individual plant, how can it be denied and is not the assured entitled to it?

In connection with large risks in particular, it is pointed out that the Schedule Rating Plan has little if any effect on the final rate. Experience rating is the predominant influence in the establishment of a rate modification and the formality of applying the schedule is simply that and nothing more. This is very probably true and were it not for the fact that experience rating can not operate as a prospective rating instrument, there would

be much to be said in favor of the elimination of the schedule as far as its application to large risks is concerned. Even so, it would be one thing if the change in physical conditions, which affect the prospective hazard of a plant, resulted from an ordinary replacement of machinery or equipment and, if because of improvement in design the new equipment were of a safer type, it might be fitting and proper that the employer be required to wait until time itself had ameliorated the inequity by including in the experience period the experience developed under the improved conditions. However, it is quite another story when the assured or employer has realized his obligation to energetically promote safe practices by the installation of an effective safety and welfare organization. Whether it be in the nature of a reward for effort, or an incentive for further effort, or as a matter of pure measurement of hazard, it is at any rate fair, reasonable and businesslike to recognize, at the earliest possible moment and to the greatest possible degree, accomplishments which so faithfully promise an immediate improvement in the experience of a risk.

There is another intensely practical consideration in connection with this phase of the problem. Consider for a moment an employer whose compensation experience has been unfavorable and growing more so and who suddenly, recognizing the fact that this trend of experience is substantially within his control, from that moment on makes every effort which, if the motive be sincere, can not fail to show substantial results. Suppose this transition were to take place within the period of any policy year to the end that the experience for that year becomes most favorable,—better than any experience shown by that employer during the last six years. It must be remembered that his rate for that particular year was predicated upon his experience for the second, third, fourth, fifth and sixth years prior thereto. The experience for the first year prior was not included for experience rating purposes, but let us assume that the experience of that year was the worst of any during his entire existence. His next rating anniversary approaches and the experience of the earliest year in his previous experience period is thrown out and the experience for the first year prior, which has been the most unfavorable, is substituted therefor. Picture the result. The employer has actually improved his experience. He has changed an unprofitable risk into a profitable one and yet the ordinary

rating procedure by which his rate is obtained will produce a substantially higher rate than ever before. It is absolutely unfair and unjustifiable. It is a condition which ought not exist. Credits for a safety organization should be so material that they would prevent the possibility of any such condition arising. A full credit for this organization need not be permanently guaranteed for as his new experience finds its way into the experience period, it will gradually influence his rate determination, although not entirely so until after a period of six years has elapsed. During this period, that portion of the Schedule Rating Plan, which should recognize changes in conditions of this kind, should be designed so that his compensation rate will reflect the new conditions and not the old.

Proponents of the continuance of schedule rating submit that it provides visible evidence of the fact that compensation insurance carriers are actively engaged in the prevention of industrial accidents. It is not enough, they say, to be engaged in this beneficent practice but it should be advertised to the world at large. The Schedule Rating Plan focuses the attention of the insuring public and the state authorities upon this very commendable activity.

In the case of the smaller risk subject to experience rating it is quite possible for a single, fortuitous, serious accident to produce an experience charge. The conditions underlying this risk may have been unusually good and this is the type of a risk in which both experience and schedule rating seem to be required for a proper measurement of the hazard. The accident may have been one not obviously inherent to the industry and the schedule credit obtained by the excellent physical conditions would eliminate to a considerable extent the apparent injustice of the charge which would be imposed by the inclusion of that accident in calculating the experience rating modification.

It is probably true that in all cases the economic arguments might not prevail. There may be certain employers today who are actuated to a more prompt response to accident prevention if they can be shown that a quick and certain benefit will result in the form of a rate reduction, but who might not be willing to admit the soundness of the theory that the prevention of economic waste is the father of operating profit. If schedule rating will produce the desired results, the end justifies the means.

At the expense of repetition, it is pertinent that since experience rating is not available to all risks, there are, nevertheless, many such risks which still present ratable physical characteristics.

Along more general lines, it can be shown that an analysis of statistics resulting from the preparation and use of the Schedule Rating Plan furnish excellent material for intelligent legislation designed to promote safe practices and it can not be denied that the schedule standards which are distributed to the various employers contain recommendations for good business practices that can but exert a splendid influence throughout the field of industry.

These are the questions which must be considered in connection with any restriction of the application of the Schedule Rating Plan. The handwriting is on the wall. A movement is gaining momentum with each passing day to emasculate the schedule but to me there seem to be certain functions which it fulfills and which it should fulfill that can not possibly be delegated to any other existing form of rating instrument. I have attempted to emphasize these points during the course of this address and sincerely hope that they will be given most serious thought and that some fitting means of providing equitable treatment thereof, will be developed before the schedule in its entirety is discarded from the compensation rating procedure.

THE ALLOCATION OF ADJUSTING EXPENSE TO LINE OF INSURANCE

BY

WILLIAM B. BAILEY

The task of allocating to lines of insurance the expenses of a multiple-line company is not easy and yet it is imperative that it should be done with reasonable accuracy. There is no item of expense whose distribution to lines is more difficult than the cost of investigation and settlement of claims. Some expenses are incurred only in the field; others are confined to the home office; but here is one which extends to the entire territorial coverage of the company, and requires the services of a large force in the home office. It is not difficult to obtain a fairly correct total of the claim expense of a company and to divide this between field and home office. But when the attempt is made to break this down to lines of insurance, the trouble begins. It is not so difficult to obtain a fairly satisfactory distribution of the home office portion for much of the work there is assigned by lines to separate groups and the expense of supervision can be distributed as an overhead.

But to distribute correctly the expense in the field is a different proposition. In order to reduce the cost in the field every adjuster must be able to adjust all kinds of claims and it is an exceptional day when he works on only one class of claims. Then, too, many claims stretch over weeks, months, or even years before they can be definitely closed. And many cases are considered closed, only to be reopened at a later date. And yet this field adjusting expense must be distributed to line.

How shall it be done? All claim notices may be given equal weight and the expense distributed to line according to the number of notices. This is a simple method but open to objections which are apparent. Or the claim notices may be weighted according to the allowance in the rate or consideration may be given to the average size of premium. Or the adjusters may be asked to estimate the comparative time required to settle different kinds of claims and from a study of these answers a set of weights may be developed. These are all better than nothing but far from satisfactory.

In 1923 The Travelers Insurance Company started to experiment with this problem in the hope that ultimately a method might be developed which would give a maximum of accuracy with a minimum of expense.

The highest accuracy would be obtained if every claim representative in the field, whether adjuster, investigator, or clerk, kept a personal time sheet which would give a correct daily record of the time devoted to each line of insurance upon which any work was done. Accordingly four adjusting offices were selected and all the workers were asked to keep daily sheets which would tell how their time had been distributed to line of insurance for a period of three months. Since there were twenty-six lines of insurance under which claims were settled, it is easy to see that the sheets were rather complicated and the work in these offices slowed down a little.

Then too, the task of tabulating the material on the time sheets after they were received at the home office proved to be a time-consuming and expensive operation. A comparison of the results by adjusting offices showed differences which were not likely to be smoothed out unless a large number of offices were studied. Then there were seasonal variations in lines of insurance which could be removed only by carrying the study throughout an entire year. And one line of coverage might increase much more rapidly than others. This was undoubtedly the method of study to ensure accuracy but the technical difficulties inherent in it caused us to search for an alternate and simpler plan.

The next effort made to solve this problem was to attach a time sheet to each claim notice when the file was prepared in the field and to require every worker in the field who spent any time upon the case to make a note of the amount of time employed on the case together with the nature of the work done. Each entry bore the initials of the recorder.

During 1925 time studies of the claims reported during a three month period were made by this method in six adjusting offices. As the cases were closed the time sheets were sent to the home office for tabulation and after nine months had elapsed all the remaining sheets were called in with estimates made by the adjusters of the future work required on those which had not been closed.

When tabulation had been completed, it was discovered that

the cost of adjusting claims varied considerably by adjusting office but that there was a striking uniformity when the types of claims were considered. The same kinds of claims were the most expensive to adjust in all offices and the same types were the cheapest in all offices and when arranged in order of cost, the position by type of claim was quite uniform in the different offices.

Here was a method which possessed many advantages. The sheets were easily kept in the adjusting offices and easily tabulated in the home office. Seasonal fluctuations were practically eliminated because the expense would be distributed to line according to the average amount of time required to settle the different type of claims. The premium volume or accident frequency could increase or decrease without affecting the accuracy of the figures.

There was, however, one grave doubt which had to be removed before this method could be adopted. The expenses of an adjusting office should be distributed by line of insurance on the basis of all claims upon which work is being done in the office. This method considered only the claim notices originating during a period. Many of the claims upon which work is currently done in an office originated months or even years before and upon some of the claims work will be done months and years in the future.

The question now was whether the division to lines of the work in an adjusting office for a year would be nearly the same if the time spent upon (1) all the cases upon which work was done in the office for a twelve month period was compared with the work done upon (2) the cases which originated during that twelve month period and then these cases were followed to a conclusion, either by recording the actual work performed upon them until they were closed or following them for a nine month period and then estimating the amount of work required before they were ultimately closed.

Opinions differed upon this subject and it was decided to make an actual test. Accordingly one fairly large representative office was selected and white time sheets were attached to all cases which were open on April 1, 1926. Yellow time sheets were attached to all notices which were reported from April 1, 1926 to March 31, 1927. Upon the white and yellow sheets combined was a record of all the work done in this adjusting office during this twelve month period.

Upon March 31, 1927 the recording of time upon the white sheets ceased. Work done on the yellow sheets continued until November 1, 1927 when the adjuster was requested to estimate the time required to carry the cases which were still open to a conclusion.

Altogether 14,264 claim notices had work done on them during the year. Of this number 12,321 originated during the year and 1,943 were brought over from the previous year. Most of these brought over cases were compensation and liability.

Two tabulations were then made, one dividing to line of insurance all of the work done in this office during the twelve month period, the other dividing to line of insurance all of the cases which originated during the year and carried to a conclusion either by the closing of the case or by an estimate. The two sets of figures agreed so closely as to be almost uncanny. It was therefore apparent that we had at last discovered a plan which was easy and economical to operate and which would furnish the desired results.

The studies made in the adjusting offices up to this time had all pointed in the same direction, and had been quite uniform, but the spread had not been sufficient to warrant the distribution of the unallocated claim expense of the entire company upon such meager statistics. Accordingly time sheets were prepared and sent to all the adjusting offices in the country except¹ New York City and Brooklyn with instructions to attach one to all claim files prepared on notices reported during the months of May and June 1927. These sheets were printed on yellow paper in order that they might stand out from the other sheets in the file and directions were given that this sheet should be upon the top of the file at all times.

On this sheet were recorded the name of the adjusting office, the claim file number, the date on which the report was received, the kind of policy, or insurance, and the character of the claim. The sheets were divided into three main divisions corresponding

¹New York City and Brooklyn were not included in the study because the work in these adjusting offices was divided into units handling separate lines of insurance so that the expense of these offices could be allocated to line. Hereafter in this discussion whenever reference is made to the work in the field it should be borne in mind that claim notices reported to the adjusting offices of New York City and Brooklyn are not included.

TABLE I
PERCENTAGE DISTRIBUTION BY LINE OF INSURANCE OF TIME USED BY ONE REPRESENTATIVE
ADJUSTING OFFICE

Line of Insurance	Notices Received in Office April 1, 1926 to March 31, 1927 Followed to November 1, 1927 and Then Estimated Ratio to Total			All Claims on Which Work was Done April 1, 1926 to March 31, 1927 Ratio to Total		
	Adjusting	Clerical	Travel	Adjusting	Clerical	Travel
Life.....	3.53%	5.35%	6.58%	3.02%	4.58%	5.14%
Accident and health.....	19.46	23.03	21.79	19.99	23.29	21.79
Workmen's compensation.....	27.82	37.38	20.34	29.65	39.78	23.04
Employers' liability.....						
Liability other than auto.....	3.72	2.96	2.30	3.57	2.75	2.16
Auto liability.....	11.57	6.86	12.00	11.73	6.46	11.47
Property damage other than auto.....	.83	.66	.47	.72	.60	.41
Auto property damage.....	28.37	19.66	31.52	26.65	18.60	31.20
Auto collision.....	.73	.44	.84	.77	.47	.72
Burglary.....	.79	.51	1.00	.78	.50	.93
Plate glass—Regular.....	.90	.80	.95	.95	.81	1.14
Auto plate glass.....	.46	.68	.44	.45	.67	.41
Steam boiler.....	.32	.17	.59	.34	.16	.55
Machinery.....	.12	.02	.15	.11	.03	.14
Fire.....	1.38	1.48	1.03	1.27	1.30	.90
Total.....	100.00	100.00	100.00	100.00	100.00	100.00

ADJUSTING EXPENSE TO LINE OF INSURANCE

with the nature of the claim. One division was for accident, death, or sickness to be used when the claim related to the individual; the second for theft, property damage, fire, etc., where the claim was for loss or damage to property; and the third was for automobile collision. The third column was made necessary because there were some automobile accidents from which claims for personal injury, property damage, and collision resulted.

Each one of these three main divisions was sub-divided into three groups to show the number of minutes of (1) investigating and adjusting time, (2) clerical time, and (3) travel time spent upon that claim. The individual working upon this claim recorded the date on which this work was done, the nature of the work performed, and the number of minutes spent upon this work and this last must be assigned to the proper column. This time sheet was not to be detached from the file and everyone doing any work of any kind upon this file had to make the proper entries until the case was closed. When this was done the time sheet was detached and sent to the home office for tabulation. If cases were reopened a new time sheet with the identical headings of the original sheet and marked "Reopened" was to be attached.

A week after this study started, sheets began to reach the home office. These increased in number until the maximum was reached in July. In November 75,620 time sheets on closed cases had been received. Since it was evident that in certain lines a number of notices sufficient to give a satisfactory basis for an average would not have been reported during May and June, the study was continued upon certain lines such as burglary, boiler, and machinery.

On November 15 the adjusters were directed to make an estimate of the amount of time which would be required to complete the settlement of those cases which were still open upon this date. Estimates to the number of 2,561 were received. The largest number of these estimates was in the following lines:

Compensation	768
Auto property damage	356
Auto liability	302
Liability other than auto	102

These estimates were recorded on separate work sheets including the file number. This was done in order that when the

case was closed the actual time required for adjustment might be substituted for the estimate.

As soon as the information upon the time sheets carrying an estimate was drawn off, the sheets were returned to the adjusting offices to be attached again to the files and to receive the record of the time spent upon them until the cases should be finally closed.

The time sheets were tabulated separately for each adjusting office and recorded for twenty-six different lines of insurance. The total number of minutes spent upon each line of insurance was found for every adjusting office in the country. These adjusting office totals were then combined in the grand totals for the entire country which gave the total number of claim notices and the total number of minutes spent upon them by line of insurance.

Thus 20,734 auto property damage notices were received during this period upon which 1,131,177 minutes of adjusting and investigating time was spent, 342,958 minutes of clerical time, and 160,987 minutes of travel time. This gives an average of 54 minutes of adjusting time, 16 minutes of clerical time, and 7 minutes of travel time expended in the field upon each auto property damage claim notice. The same procedure was used for every line of insurance.

The average amount of time required upon all of the claims studied was 52 minutes of adjusting time, 19 minutes clerical time, and 7 minutes of travel time. For the casualty lines in which you are interested, the average number of minutes of adjusting time was 56 minutes, the clerical time 22 minutes, and travel 7 minutes.

As far as investigating and adjusting was concerned, the most expensive line was burglary with 181 minutes followed by automobile liability 167 minutes, liability other than auto 105 minutes, while the cheapest were employers' liability 33 minutes, compensation 27 minutes and auto plate glass 20 minutes.

Burglary and compensation are the lines where clerical expense per notice is the greatest.

When the average amount of adjusting, clerical, and travel time on each type of claim had been determined, the total number of claim notices reported for the twelve months in the entire country was distributed to line of insurance and the number in

each line was multiplied by the corresponding average to determine the total number of minutes spent upon the adjusting of claims in each line of insurance for the entire country. Thus there were 102,483 auto property damage notices received for the entire country during the year. Using the 54 minutes average per claim notice developed in the time study, 5,534,082 minutes of adjusting and investigating time was spent upon auto property damage claim notices.

Altogether 22,454,830 minutes of the time of adjusters and investigators was required upon all claim notices of all types reported during the year. Therefore 24.6% of the salaries of adjusters and investigators in the field should be charged against auto property damage. The same procedure was followed for the clerical time and the salaries of the clerks in the adjusting offices were allocated to lines of insurance in the same way. Travel expense followed the distribution of travel time by lines of insurance.

A study was made of the arrangement of the adjusting offices in the field and it was found that 67% of the space was assigned to adjusters and investigators while 33% was assigned to clerks. Therefore in the distribution of rent to line of insurance, twice the weight was given to the adjusting ratios that was given to the clerical ratios. The miscellaneous expenses of the office followed rent.

The work of the chief adjuster in each adjusting office consists in general supervision of the work of the office and a review of claim settlements in all lines. The salaries of the chief adjusters were therefore spread as an overhead following the ratios developed by the time studies of investigating and adjusting.¹ The expenses of the adjusting offices in New York City and Brooklyn were now added to complete the picture of the field.

Having completed the distribution to line of insurance of the adjusting expense in the field, there remained the problem of the allocation to line of the home office expense. This was very

¹In Table II is given the number of claim notices in the casualty lines for the entire country for 1927, the average number of investigating and adjusting minutes per claim notice, the total number of minutes employed on each line, and the percentage distribution of this time to line of insurance.

In Table III the same information is given for clerical time.

simple for the supervisory force since separate groups had charge of different lines of insurance. Where a group had charge of more than one line as was the case with automobile insurance, their salaries were assigned to line according to the figures developed by the time study of investigators and adjusters in the field. The clerical work in the home office follows closely the clerical work in the field and therefore the ratios developed from the time study of the clerical force in the field were used to distribute to line the expenses of the clerks in the home office.

Claim department rent and miscellaneous expense in the home office followed the distribution of the salaries. The addition of the home office and field charges gave the major part of the expense in dollars and cents for the adjusting work of the company allocated to lines of insurance.

When the bureau charges and the legal claim expense had been included the work was done.

The table below shows for the casualty lines the loss expense ratio to earned premiums. Legal claim expenses are included.

Line of Insurance	Earned Premiums	Loss Expenses	Loss Expense Ratio
Workmen's compensation.	24,013,367.27	1,781,043.04	7.42
Liability other than auto.	6,522,166.49	838,022.05	12.85
Auto liability.....	15,818,590.03	1,389,767.52	8.79
Auto property damage....	6,036,232.86	997,071.36	16.52
Auto collision.....	1,353,221.43	64,596.53	4.77
Property damage and col- lision other than auto...	356,067.17	35,727.64	10.03
Burglary.....	2,439,909.97	91,242.58	3.74
Plate glass.....	869,210.17	67,614.37	7.78
Steam boiler.....	838,513.63	7,875.53	.94
Machinery.....	151,956.22	3,336.30	2.20

There are several rather significant facts which were brought to light as a result of this study. Auto liability and liability other than auto furnished less than 10% of the claim notices in the casualty lines and yet required over 28% of the time of the adjusters and investigators to settle them. Auto property damage with 29% of the claim notices required more of the adjusters and investigators time than the compensation with over 53% of the total notices in the casualty lines.

	Distribution of Claim Notices in the Field	Distribution of Adj. & Inv. Time in the Field	Distribution of Clerical Time in the Field
Workmen's compensation...	53.24%	29.33%	57.74%
Employers' liability.....	2.03	1.37	1.78
General liability.....	4.20	8.99	4.28
Auto liability.....	5.71	19.44	7.48
Property damage other than auto.....	1.02	1.29	.84
Auto property damage.....	28.99	31.89	22.49
Auto collision.....	1.54	2.26	1.20
Burglary.....	.96	3.53	2.18
Plate glass—regular.....	1.58	1.51	1.46
Auto plate glass.....	.50	.20	.32
Steam boiler.....	.14	.21	.15
Machinery.....	.09	.08	.08
Total.....	100.00	100.00	100.00

From the field study it is evident that the adjusting cost is lowest in the South and West and highest in the metropolitan districts. This is particularly true of the automobile and liability lines where every claim notice bears a threat of suit and the investigation must be made with great care.

It may also be stated as a general rule that where an adjusting office is low in the cost of settling one kind of claim, it is low in all lines. Thus in adjusting offices of four large metropolitan centers, the average cost of settlement was considerably above the country average in every line. On the other hand two southern offices were considerably below the average for all lines. In fact, the average cost of adjusting in the first group of offices was more than twice that in the second group.

As was to be expected, travel expense was lowest where the territory was the most restricted and the population the densest.

The standard deviation from the average time required to adjust a claim was greatest in the automobile lines and least in plate glass. Compensation showed a considerable number of cases in which the settlement was very simple and consisted principally in the payment of medical, and a few cases which are likely to stretch over years before they can be finally closed.

These figures are offered to your consideration not because they are accurate but because they are the result of a painstaking effort to arrive at the truth. Certain mistakes were made which can be avoided in another study. As actual figures take the place of estimates in the few cases still outstanding, we shall get closer to

the truth. It is to be hoped that, this description of the efforts of one company to approximate more nearly the truth will lead other companies to investigate still further along the same line and to share their methods and results with the members of this Society. In this way we may in time develop improved methods of handling this extremely difficult problem in insurance accounting.

TABLE II
TIME USED TO INVESTIGATE AND ADJUST CLAIM NOTICES
IN THE FIELD, ENTIRE COUNTRY, 1927

	Number of Claim Notices	Average No. Minutes Per Claim Notice	Total Number of Minutes	Percentage Distribu- tion to Line
Workmen's compensation.	188,218	26.9	5,074,033	29.23
Employers' liability.....	7,195	33	237,435	1.37
General liability.....	14,852	105	1,559,460	8.99
Auto liability.....	20,207	167	3,374,569	19.44
Property damage other than auto.....	3,609	62	223,758	1.29
Auto property damage....	102,483	54	5,534,082	31.89
Auto collision.....	5,445	72	392,040	2.26
Burglary.....	3,386	181	612,866	3.53
Plate glass—regular.....	5,581	47	262,307	1.51
Auto plate glass.....	1,775	20	35,500	.20
Steam boiler.....	489	74	36,186	.21
Machinery.....	310	45	13,950	.08
Total.....	353,550	49.1	17,356,186	100.00

TABLE III
CLERICAL TIME CONSUMED ON CLAIM NOTICES IN THE
FIELD, ENTIRE COUNTRY, 1927

	Number of Claim Notices	Average No. Minutes Per Claim Notice	Total Number of Minutes	Percentage Distribu- tion to Line
Workmen's compensation.	188,218	22.3	4,208,959	57.74
Employers' liability.....	7,195	18	129,510	1.78
General liability.....	14,852	21	311,892	4.28
Auto liability.....	20,207	27	545,589	7.48
Property damage other than auto.....	3,609	17	61,353	.84
Auto property damage....	102,483	16	1,639,728	22.49
Auto collision.....	5,445	16	87,120	1.20
Burglary.....	3,386	47	159,142	2.18
Plate glass—regular.....	5,581	19	106,039	1.46
Auto plate glass.....	1,775	13	23,075	.32
Steam boiler.....	489	23	11,247	.15
Machinery.....	310	19	5,890	.08
Total.....	353,550	20.6	7,289,544	100.00

A SYSTEM OF PREPARING RESERVES ON WORKMEN'S COMPENSATION CLAIMS

BY

A. N. MATTHEWS

The various methods which have been used or proposed for the calculation of workmen's compensation loss reserves have fallen under one or the other of the following headings or have been a combination of both. (1) An estimate of the probable cost of outstanding losses by individual estimates, or (2) that part of the expected loss payments which are unpaid at the date of valuation; that is, a certain percentage of the earned premium less the paid losses. The method of calculating the compensation loss reserves provided for in Schedule P of the convention form of annual statement is a combination of the two methods mentioned above. The actual outstanding losses are calculated for each year of issue. For the last three years of issue the reserve is calculated by taking 65% of the earned premium less losses and loss expense paid. The reserve actually set up for these last three years is either this reserve or the individual estimates of outstanding losses, whichever is the greater. The purpose of this paper is to describe the method of keeping individual estimates of outstanding compensation claims which is now being used by The Travelers Insurance Company.

The system involves no new or exceptional principle. The outstanding losses are valued in the same manner as has been followed for a number of years past. In the early days of compensation reserve records it was the practice, whenever it was necessary to obtain outstanding losses, to obtain from the claim department every open claim file and to list or punch on Hollerith cards the necessary information. This method did not produce satisfactory results. The work was necessarily done in a hurry in order not to interfere with the regular flow of work through the claim department any more than necessary. Naturally such a hastily prepared record involved more than a reasonable number of errors. There was also the further drawback that because of claim files being out of file for various reasons there was no certain assurance that all open files were received.

The next system adopted consisted of the carrying of the reserve record currently on Hollerith cards. Briefly, this plan was as follows:—When notice of an incurred claim was received it was forwarded to the actuarial department where a card was punched for the incurred amount or amounts; when a change in estimate occurred another report was received and from this report the new incurred amount was punched as an addition to the reserve and a card for the previous incurred amount was punched as a deduction from the reserve. The total of the paid drafts was deducted from the reserve. The reserve at the end of any month would be determined by adding to the reserve at the end of the previous month the amount of the new incurred claims plus the amount of the revised estimates (gross) less the amount of previous estimates (gross) on revised cases and less the amount of drafts paid during the month. This system, while producing an accurate reserve in theory did not prove satisfactory. There was no effective bookkeeping control. A Hollerith card record of individual claims is not a satisfactory unit record, particularly where a single claim is represented by several cards. Individual claims lost their identity and it was impossible to check the reserve with the claim department or with any other records.

To overcome the defects of the two systems briefly described above, the present system was evolved. This system is, in effect, similar to the system first mentioned in that the basic record is a unit statistical history of each outstanding claim. It is a fact that the work involved in maintaining this record duplicates to a certain extent work being done in the claim department. This individual record used solely for reserve purposes has overcome the defects incident to the first described system in that it insures that every claim is used in the reserve record and it also overcomes the principal defect in the second described record inasmuch as every step in the reserve process is balanced and there is a proper control on the work.

The basic record of the system is the "Compensation Loss Reserve Card" (See Exhibit No. 1). This card is divided into three sections—the first section provides for registration and identification data; the second section a record of incurred costs and the third section a record of draft payments. An explanation of the various items follows:

Registration

Form	In this space is entered the code number to designate the form of policy under which the loss was incurred. For example, industrial compensation is coded 90 and coal mine compensation 91. By means of additional form codes this system could be extended to liability and other lines of casualty insurance.
Notice Number	This is the designating number of the claim.
Accident Month & Year	This is the month and year in which the accident occurred.
Policy Year	This is the year in which the policy under which the loss occurred was issued.
Serial Number	As each new claim is received in the actuarial department it is assigned a serial number and the notice number together with other information is entered after this serial number in a register. In connection with this reserve system, the serial number serves as a means of locating the file in case the notice number is incorrectly entered.
Adjusting Office . . .	In this space is entered the code number of the office through which the particular claim is handled.
State	In this space is entered the state to which the accident is chargeable.

Incurred Cost

Month, Day, Year . . .	The date of entry.
Kind of Injury	Kind of injury is coded. The code is as follows: 5. Fatal 6. Permanent total 4. Permanent partial 2. All other
Claim	The amount of incurred compensation indemnity.
Medical	The amount of incurred compensation medical.

Drafts Issued

Month, Day, Year . . .	The date draft is paid.
Draft Number	The number of the draft (for identification purposes).
Claim	The amount of payment—indemnity.
Medical	The amount of payment—medical.

Memo

Claim, Medical	These spaces are provided for entering totals of indemnity and medical paid to date as of any reserve period.
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The compensation reserve division is divided into seven units, each unit consisting of a supervisor, a file clerk and a machine operator. The loss reserve cards are filed according to adjusting office in numerical order and each supervisor has charge of a group of adjusting offices. All entries on the loss reserve cards and almost all other entries in connection with the reserve work are made on special Burroughs Bookkeeping machines. The cards are filed in boxes in specially constructed desks of the tub desk variety. The special Burroughs Bookkeeping machines used in connection with posting entries to the loss reserve cards are of the duplex type and so designed that the carriage holds the loss reserve card (Exhibit No. 1) on the right side and a proof sheet (Exhibit No. 2) on the left side. The proof sheet will be described at a later point. The machine rollers are, of course, in two parts which permits the cards to be inserted and taken out of the machine without disturbing the proof sheet. Special keys are provided on the machine and since codes are used to designate adjusting office and kind of injury the machine serves for this particular job the purpose of both a transcribing and adding machine.

The data entered on the Compensation Loss Reserve cards are obtained from four sources, namely, notices of new claims; special reports (revisions of previous estimates); closed cases and draft payments or vouchers. The manner in which the information taken from each of these sources is entered on the reserve cards will be described individually in the order named. At this point it is pertinent to state that all estimates of incurred costs for compensation indemnity and medical are made by the company's adjusters in the field with the exception of certain fatal, permanent total and other claims involving life annuities which will be referred to at a later point.

The same form of proof sheet (Exhibit 2) is used for all four operations mentioned above. This sheet provides for designating the kind of operation being performed, the date of operation and the adjusting office. The sheet is divided into two sections—the "pre-listing" section and the "accumulator" section. The work is in fact done in duplicate. This is the best control on the accuracy of the work that has been developed to date and is believed to be sufficient. For certain operations the pre-listing, as the heading indicates, is made prior to the entry of the items

on the reserve cards and in the "accumulator" section and for others the order is reversed. The pre-listing is done on a Duplex Burroughs machine with split adding fields so that the addition of four columns of figures can be handled in practically all operations. This feature is necessary in connection with the operations designated on these sheets as "Specials" and "Closed Cases." The accumulator section is filled in at the same time that entries are made on the loss reserve cards.

NEW CLAIMS

Notices of new claims are received in the actuarial department on a form called a "Pending Claim Report." Each such report contains all information necessary to complete the first section of the loss reserve card together with the estimated indemnity and medical cost of the case. To facilitate the work of entering the data the information to be registered in code is coded before the reports are sent to the reserve division. After the reports are coded they are sorted to adjusting office and pre-listed. The pre-listing on this operation is the same as any two column addition on a split adding machine. The indemnity incurred is entered in the "Claim" column and the medical incurred in the "Medical" column. The pre-listing sheets, together with the accompanying reports, are then turned over to the unit supervisors. It occasionally happens that a draft will have been paid before the pending claim report is received in the actuarial department and in such a case a card is made up in skeleton form from information contained on the draft stub. The card file is searched for such cards and, if any are found, they are turned over, together with the proof sheet and the reports, to the machine operator who proceeds to make up new cards for those cases for which no card was in file and complete the registration and postings on those cards which were found to be in file. The procedure is as follows: The proof sheet is inserted in the left side of the carriage and the card in the right side. After the necessary information has been inserted in the first section of the reserve card and the date, kind of injury, incurred claim and incurred medical entered on the first line of the incurred cost section, a lever is pressed which holds down the keys which control the

incurred claim and incurred medical. Another lever is pressed which shifts the carriage to the position just previously occupied by the card and the amounts which have been registered on the card are again registered on the proof sheet in the first two columns of the "accumulator" side. The machine registers but does not add in the first position and both registers and adds in the second position. The card is then removed from the machine but the proof sheet remains. This operation is repeated until cards have been prepared for all new claims of the particular adjusting office. When the last card has been removed from the machine a total lever is pressed which prints the total incurred claim and total incurred medical entered on the "accumulator" side. The totals on the accumulator side are then compared with those on the pre-listing side. If totals do not check it is a very simple matter to examine the proof sheet (Exhibit 2) and determine the error or errors. The two independent listing operations do not provide an absolute check on the accuracy of the work as it is possible that both operators may make an error of the same amount. However, such instances are rare.

SPECIAL REPORTS

Whenever any change in the status of a claim has taken place which materially affects the estimated indemnity or medical cost, and at least every three months, a "Special Report" is prepared by the adjuster and sent to the home office claim department. This special report is similar to the pending claim report in that it contains or provides for all of the registration information contained or inserted on the pending claim report. This report is divided roughly into two parts—one part shows the revised estimates and the other part which is headed "For Home Office Use Only" provides for inserting the last previous estimates of incurred claim and medical. The files are pulled in the claim department and the necessary coding and amounts of last previous estimates transferred to the special report.

In the case of New York fatal and permanent totals and other claims involving life annuities the special reports are prepared in the actuarial department from a card file containing the necessary

data for each case. The special reports are made up at intervals of six months or whenever there is a development affecting the incurred claim cost. The actuarial department enters only the annuity value or outstanding amount. The amount paid to date is added to the outstanding by the claim department to produce the revised estimate of total incurred cost.

These special reports are sent to the actuarial department daily and the procedure is substantially the same as in case of the pending claim reports. As these reports apply to already existing claims the claim cards are drawn from the file and turned over to the Burroughs machine operator together with the special reports. In this particular operation the pre-listing is done subsequent to the entering of the items on the cards and on the accumulator side of the proof sheet. This procedure is desirable inasmuch as errors sometimes are noted on the special reports and must be turned back to the claim department for correction before they can be used. The machine operator enters the date, kind of injury and latest incurred claim and medical costs on the card in the first empty line of the incurred cost section. These incurred amounts are then carried over to the accumulator side of the proof sheet. The next operation consists of registering and adding in the accumulator side of the proof sheet the last previous incurred claim and medical costs. This involves the duplex feature of the machine previously mentioned. The incurred costs for the previous estimates register to the right of the incurred costs for the latest estimates. This feature is not of consequence but simplifies the identifying of the new and old items. When all the items have been entered on the cards and on the proof sheets the totals of both the upper and lower registers are taken off showing the four column totals previously mentioned, that is, the total of the new claim and medical incurred costs and the total of the old claim and medical incurred costs. The special reports are then turned over to an operator who proceeds with the pre-listing operation and the four totals are compared for a check the same as in case of the operation in connection with the pending claim reports. There is also a further check in case of this particular operation in that the operator working on the cards takes the old estimates from the cards, whereas the operator doing the pre-listing work takes the old estimates from the "For Home Office Use Only" section of the special reports.

Probably a clearer understanding of this operation will be obtained from a study of Exhibits 1 and 3 attached, particularly Exhibit 3, which shows the results of the operations of the split column duplex machines.

CLOSED CASES

When a file has been closed by the issuance of a draft in final payment of the case, or for any other reason, a final report of loss is filled out in the adjusting office and sent to the home office claim department. The final incurred costs are entered on the claim file after checking with the final report and claim file is then sent to the actuarial department. The procedure is substantially the same as in case of the handling of special reports. The pre-listing operation comes last since it is sometimes necessary to return files to the claim department for certain corrections. The final amounts paid are entered on the reserve card in the incurred cost section and also transferred to the accumulator side of the proof sheet. The last previous incurred costs are also entered on the accumulator side in the right hand position. After totaling, the claim files and proof sheet are turned over to another operator for the pre-listing work. The operator working upon the cards on the accumulator side of the proof sheet takes the last previous incurred costs from the reserve cards and the pre-listing operator takes such incurred costs from the claim files, thus providing a further check on the accuracy of the work similar to that provided in case of the special reports. The reserve cards are then taken from the active file and filed in the closed file. However, before this is done the draft payments are added in order to make sure that the total of the payments on the card, both claim and medical, equal the final incurred cost posted in the incurred cost section of the card. It sometimes happens that a file will clear through to the actuarial department before all issued drafts have been paid. This occurs for the reason that the claim department files are operated on a written draft basis, whereas the actuarial department records must of necessity be maintained on a paid draft basis. In such cases the draft numbers for the missing item or items are entered on the reserve card in pencil and the card is put back into the open file where it remains until the drafts necessary to complete the case have been paid and entered on the card.

DRAFT PAYMENTS

Whenever a payment is made on a claim a draft stub or voucher is sent to the home office. These vouchers are received in the actuarial department daily together with a bookkeeping control figure. For purposes of the compensation reserve work the vouchers are sorted to adjusting office and the payments for each adjusting office are pre-listed and totaled on the proof sheet before the draft vouchers are turned over to the unit supervisors. The totals of all the proof sheets are balanced to bookkeeping control amounts. The procedure from this point on is substantially the same as in case of the three previously described operations. The loss reserve cards are drawn from the files and turned over together with the proof sheet and vouchers to the machine operator who enters the draft payments in the "Drafts Issued" section of the loss reserve card and also on the accumulator section of the proof sheet, the totals of this section being checked with the totals of the pre-listing section. It will be noted that this operation, like the operation in connection with the pending claim reports, involves only the single split column adding feature. Examples of the details of this operation are shown on Exhibits 1 and 4.

REOPENED CASES

In compensation insurance there are a substantial number of cases reopened for payment of additional medical fees or for other reasons. In such cases the actuarial department receives advice on a form which shows the amounts paid at the time of closing the case and the estimated additional cost of the payments still to be made. A new card is prepared showing the usual registration and identification data and the new incurred cost—that is, the amount of previous payments plus the estimated amount of future payments are entered in the "Incurred Cost" section of the loss reserve card. The amounts paid to date are entered as totals in the "Drafts Issued" section of the card. From this point on the handling of the case is the same as the handling of regular open cases.

The proof sheet totals are posted daily to a card designated as a "Compensation Outstanding" card. A card is maintained for each adjusting office. These cards are in the nature of sub-

sidiary ledger accounts. There is also a card for all adjusting offices combined to which the individual adjusting office totals are posted monthly. This card is in the nature of a general ledger account. The card in question is contained in Exhibit 5. The various headings are self-explanatory. At the beginning of each month the balances as of the end of the previous month are entered in the first line of the section headed "Balance." A special direct subtracting adding machine is used. The previous balances are picked up on the machines and the additions or subtractions from the reserve transcribed into the proper columns—drafts paid, old estimates and new estimates—and the proper deductions or additions are made automatically, the final result being the new balance. At the end of each month the adjusting office totals are transferred to the so-called control account card and the balances shown on this card are the total amounts of claim and medical outstanding.

The system does not take into consideration incurred but not reported items, as it is designed to deal only with claims actually reported and the question of reserve for incurred but not reported claims is a separate one.

At the end of each quarter the reserve is drawn off from the individual loss reserve cards. This serves as a further check upon the accuracy of the accumulation of the reserve on the compensation outstanding cards and also furnishes detailed information which is used for various purposes such as the determination of policy year loss ratio experience, loss ratio experience by states for Schedule W and a check on the accuracy of our Schedule Z results. Various tabulations are made at the end of each quarter, the tabulations as of the end of the year for Annual Statement and other required or desirable purposes being carried out in greater detail than the tabulations at the end of the three previous quarters. The necessary information is transferred from the individual loss reserve cards to Hollerith punch cards. A copy of the punch card used is shown in Exhibit 6. This is a simple card and requires no particular explanation. The first step in the process after all entries have been posted for the month is to add up and enter in pencil in the "Memorandum" column at the right of the individual loss card the total amount of claim and medical payments to date. These additions are checked and the cards are then divided into small groups, about 100 to the

group, and totals of the four items—incurred claim, incurred medical, paid claim and paid medical—are drawn off on an adding machine. These totals are entered on a special slip which is placed with the cards. The cards are then turned over to punch operators who punch out the identification data and other coded information and the four monetary items just referred to. Credits because of adjustments sometimes occur in the "Drafts Issued" section of the loss reserve card and such credits are translated to the punch cards by means of punching complements. The punch cards for each group of loss reserve cards are then balanced on the Hollerith tabulating machines to the totals predetermined by the adding machine listings and any errors corrected. When a balance has been effected between the adding machine totals and the punch card totals the punch cards are then ready for such tabulations as are required.

While the within described system has been in operation less than two years, the results so far obtained have been entirely satisfactory. The division employs approximately twenty-eight clerks and the equipment, in addition to desks and the usual filing equipment, consists of nine special Burroughs Bookkeeping machines and six regular adding machines. While the expense of putting the system into operation was material, it is felt that as experience is obtained the ultimate cost of maintaining the system will not be disproportionate in view of the accurate results obtained and the value of such results, both from the standpoint of preparing annual statement and other filing data and the internal value from the company's standpoint. The force carrying on the work has been gradually reduced and it is believed that certain contemplated changes in handling the detail work will further reduce the personnel required.

In order to start the system it was necessary to prepare cards for all open compensation cases. This was done by referring to the claim files and entering the necessary registration and identification data in the first section of the card, the latest incurred cost in the "Incurred Cost" section of the card and the total amount paid to date in the "Drafts Issued" section of the card. This work was done by experienced clerks and carefully checked.

It may be observed that the system stresses the point of carefully checking practically every step by duplicate operations. It is believed that this is necessary and well worth while because

of the resultant accuracy of the records, particularly since with the exception of the paid draft items, there is no absolute control to which the department can balance its results.

While the system is designed primarily for compensation, it is obvious that it is applicable to maintaining reserves for almost any line of insurance and it is evident that for most lines the cost would not be as great in proportion to the number of claims as in case of compensation since the average number of entries per claim would be much less.

EXHIBIT 1

COMPENSATION LOSS RESERVE

ACC.	POL.	FORM	NOTICE NO.	
Mo. Yr.	Yr.	9 0 0	1 2 4 5 5 8 1	
		SERIAL NO.	ADJUSTING OFFICE	STATE
AUG 27 '27		3 6 7 5 3 1	1 5 8	0 4

INCURRED COST				
MO. DAY YR.	KIND INJURY	CLAIM	MEDICAL	
OCT 14 '27	2	2 0 0	2 5 0	
NOV 18 '27	2	2 0 0	7 5 0	
DEC 21 '27	2	3 3 3	7 5 0	
MAY 5 '28	2	1 8 3	6 1 8	

DRAFTS ISSUED						
MO. DAY YR.	DRAFT NO.	CLAIM		MEDICAL		MEMO.
						CLAIM MED.
OCT 12 '27	6 6 2 8 7			9	2 0	
OCT 19 '27	6 6 0 3 3	5	0 0 1			
OCT 20 '27	6 6 1 7 1			9	0 0 0	
NOV 2 '27	6 6 3 4 2	3	3 3 4			
NOV 2 '27	6 6 5 9 0	3	3 3 4			
NOV 22 '27	6 6 9 8 3			8	6 5 0	
NOV 22 '27	6 6 8 9 7			3	2 5	
NOV 25 '27	6 6 8 7 9	3	3 3 4			
DEC 6 '27	6 7 3 3 6			2	2 0	
DEC 8 '27	6 7 2 4 1	3	3 3 4			
DEC 18 '27	5 8 1 5 1 2			1	5 5 2 5	
JAN 17 '28	5 8 2 3 3 4			3	7 5 0	
FEB 17 '28	5 8 3 0 6 9			1	4 6 5 0	
FEB 17 '28	5 8 3 1 0 9			3	1 5 0	
FEB 28 '28	5 8 3 2 9 6			5	1 5 0	
FEB 29 '28	5 8 3 2 9 7			4	1 5	1 8 3 6 1 8

DATE CLOSED MAY 5, 1928

DATE REOPENED

EXHIBIT 2
PROOF SHEET

COMPENSATION OUTSTANDING

New Claims ✓

Date APRIL 24, 1928

Specials_____ APRIL 24 Ent'd

Closed Cases_____

Adjusting Office BALTIMORE

Drafts Paid_____

PRE-LISTING		ACCUMULATOR	
CLAIM	MEDICAL	CLAIM	MEDICAL
140	13	140	13
18	25	18	25
60	75	60	75
13	25	13	25
240	175	240	175
100	25	100	25
80	161	80	161
651	499	651	499

**EXHIBIT 3
PROOF SHEET
COMPENSATION OUTSTANDING**

New Claims_____

Date APRIL 24, 1928

Specials ✓

APRIL 24 Ent'd

Closed Cases_____

Adjusting Office BALTIMORE

Drafts Paid_____

[illegible]

EXHIBIT 4
PROOF SHEET
COMPENSATION OUTSTANDING

New Claims_____

Date APRIL 24, 1928

Specials _____

Closed Cases_____

Drafts Paid _____ Claim _____

Adjusting Office BALTIMORE

[illegible]

260 PREPARING RESERVES ON WORKMEN'S COMPENSATION

EXHIBIT 5

COMPENSATION OUTSTANDING

Adjusting Office BALTIMORENo. 7

DATE	-DRAFTS PAID		-OLD ESTIMATES		+ NEW ESTIMATES		BALANCE	
	CLAIM	MEDICAL	CLAIM	MEDICAL	CLAIM	MEDICAL	CLAIM	MEDICAL
3 31					36.00	43.00	11009200	1271100
4 2					284.00	270.00	11041200	1302400
4 10					50.00	11041200	1302900	
4 11					380.00	364.00		
4 12					153.00	69.00	11095000	1346200
4 13					68.00	40.00	11101800	1350200
3 14					348.00	260.00	11136600	1376200
			12345.00	1308.00	12432.00	1448.00		
					160.00	80.00		
3 16			2376.00	773.00	7976.00	8263.00	11161300	1394000
			2108.00	282.00	2050.00	225.00		
					44.00	23.00	111719600	1396300
3 17					12.00	8.00		
					89.00	84.00		
4 18	16.67		691.00	629.00	373.00	835.00	111728500	1405900
			140.00	70.00	160.00	70.00		
4 18					87.00	20.00	111717033	1421600
4 19					73.00	16.00	111725733	1422100
			75.00	15.00	3237.00	275.00		
			660.00	135.00	373.00	135.00		
4 20			326.00	172.00	280.00	190.00	111968133	1430300
			359.00	228.00	39.00	30.00		
4 20			39.00	40.00	360.00	277.00	111960233	1423700
4 21					4700.00	5000.00	111996233	1433400
					54.00	24.00		
4 21			509.00	130.00	495.00	102.00	111660333	1430800
					67.00	89.00		
4 23					286.00	175.00	111685633	1436900
4 24			553.00	290.00	2189.00	560.00	111714233	1454400
					162.00	101.00		
					651.00	492.00		
4 25			141.00	103.00	221.00	81.00	111959633	1541100
4 26			244.00	75.00	263.00	72.00	111967633	1539000
					1461.00	327.00		
					62.00	16.00		
4 27			589.00	530.00	451.00	487.00	12115933	1874000
					130.00	130.00		
4 28			287.00	291.00	359.00	302.00	12102133	1871000
					20.00	13.00		
4 30	14.00	0*	517.00	145.00	309.00	119.00	12111333	1873600
	234.00	77.2*	5625.00	335.00	324.00	335.00		
	12.00	0*	44.00	30.00	41.00	142.00		
			346.00	166.00	485.00	161.00		
					51.00	29.00		
					604.00	347.00		
					61.00	20.00		
					315.00	251.00		
					77.00	48.00		
4 30	989137	408725-					12016333	1854170
							11017216	1543465

EXHIBIT 6

COMPENSATION OUTSTANDING — MARCH 31, 1928

Form				Notice Number				12 Accident 11 Mo. Yr.		Pol. Yr.	Adj. Off.	State	Ind. Int.	INCURRED				PAID			
														Claim		Medical		Claim		Medical	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22

1626

RECENT DEVELOPMENTS WITH RESPECT TO THE
DISTRIBUTION OF WORKMEN'S COMPENSATION
INSURANCE COSTS

BY

CHARLES J. HAUGH, JR.

It has been contended for several years that the procedure followed in developing rates for workmen's compensation insurance does not permit of an equitable distribution of costs among risks. This contention rests on two fundamental principles. First, that the expenses incurred in conducting the business are not wholly proportional to the premium size of risk but consist of the sum of a fixed amount per policy and an amount which is proportional to the premium, and second, that the loss cost varies with the size of the risk.

The logic of the contention as respects the distribution of expenses becomes apparent upon consideration of the elements which make up the total expense incurred on this line of insurance. Heretofore the amount available for expenses on a risk has been equivalent to the product of the expense loading and the total premium for the risk. The only exception has been in the case of minimum premium risks. Production expenses and taxes vary with the gross rate, consequently a percentage loading in the rate distributes these expenses equitably. Claim adjustment expense may likewise be distributed equitably in the same manner. However, the expenses incurred for general administration, audit, and inspection cannot logically be treated as a function of the rate. For each policy issued the carrier must follow a definite procedure involving an expense which consists of a fixed minimum amount plus an additional amount which may be assumed to vary with the premium. For every policy the application must be reviewed, the risk classified and coded, the policy written, proper records established in the several departments, an inspection made, the premium collected, an audit made upon expiration of the policy, the records revised in accordance with the audit, etc. As these operations are performed for each policy, it is proper that each policy be charged an amount equal to the minimum amount incurred in connection with the small and less expensive

policies and that the remainder of the expense be provided for by a percentage loading in the rates.

As a matter of fact this principle has been recognized in the establishing of minimum premiums for this line. The general formula for determining minimum premiums has been

$$10R + 8 \quad \text{where } R = \text{manual rate}$$

This formula contemplates a minimum payroll of \$1000 and provides a fixed amount of \$8 to meet the minimum expenses incurred in issuing and administering a policy. This constant of \$8 which was established in 1917, represents the estimated minimum fixed expense loaded for production and taxes. The details of the calculation of the constant are given in Table 1.

TABLE 1

CALCULATION OF CONSTANT USED IN PRESENT MINIMUM PREMIUM FORMULA

Policies Issued in 1916 (Excluding Policies "Not Taken") Compared with Expenses Paid in 1916 as Shown in N. Y. Schedule W
Six Companies Combined

(1) Number of Policies	(2) Expense Item	(3) Amount Paid in 1916	Proportion of Expense Assumed to Have Been Incurred in Direct Ratio to Number of Policies Issued		
			(4) % of Total	(5) Amount (3) × (4)	(6) Amount per Policy (5) ÷ (1)
54,530	Inspection and Accident Pre- vention.....	\$152,781	50	\$76,390	\$1.40
	Pay-rollAuditing	107,585	80	86,068	1.58
	Miscellaneous Administration	438,938	40	175,575	3.22
	Total.....	\$699,304		\$338,033	\$6.20

$$\frac{\$6.20 \text{ (net charge)}}{.80} = \$7.75 \text{ or approximately } \$8.00 \text{ gross charge.}$$

However, the \$8 constant is available for expenses only on those minimum premium risks on which the pay-roll does not exceed \$1000. On those minimum premium risks on which the payroll exceeds \$1000 only a part of the \$8 constant is available for expenses; and on risks which develop premiums slightly in excess of the minimum premium the total amount available for administrative expenses may be very much less than that provided by the constant, as illustrated in Table 2.

TABLE 2
DISTRIBUTION OF PREMIUM ON RISKS OF VARIOUS SIZES
Manual Rate \$1.00—Minimum Premium \$18 (10 R + 8)

(1) Payroll	(2) Premium at Manual Rate $1 \times \frac{\text{Col. (1)}}{100}$	(3) Actual Premium	Distribution of Premium*		
			(4)	(5)	(6)
			Losses & Loss Exp. $.68 \times \text{Col. (3)}$	Production and Taxes $.20 \times \text{Col. (3)}$	Adminis- tration, Audit and Inspection $.12 \times \text{Col. (3)}$
1,000	10.00	18.00	6.80	3.60	7.60
1,500	15.00	18.00	10.20	3.60	4.20
1,800	18.00	18.00	12.24	3.60	2.16
2,000	20.00	20.00	13.60	4.00	2.40
2,500	25.00	25.00	17.00	5.00	3.00
5,000	50.00	50.00	34.00	10.00	6.00
6,333	63.33	63.33	43.06	12.67	7.60
7,500	75.00	75.00	51.00	15.00	9.00
10,000	100.00	100.00	68.00	20.00	12.00

*Distribution based on expense loading of 40% made up as follows:

Administration.....	7.5%	Taxes.....	2.5%
Claim Adjustment.....	8.0%	Payroll Audit.....	2.0%
Inspection.....	2.5%	Production.....	17.5%

It is apparent from Table 2 that the amounts produced by minimum premium risks for administrative expenses decrease as the exposure increases until the exposure reaches the point at which the premium at manual rates equals the minimum premium. Beyond this point the amount available for administrative expenses increases proportionately with the increase in premium. Under these conditions minimum premium risks which develop exposure somewhat greater than \$1000 and a group of risks which develop premiums somewhat greater than the minimum do not produce sufficient premium to provide for expenses.

There is a general agreement to the principle of providing a minimum charge per policy for expenses supplemented by a percentage loading in the rates but there is some disagreement as to the amount of the minimum charge. The National Bureau of Casualty and Surety Underwriters developed a minimum expense charge of \$12 per policy, based upon the assumption that 50% of the general administration expenses and 75% of the audit expenses are proportional to the number of policies. The details of this calculation are shown in Table 3. It is of interest to note that a charge of slightly more than \$13 would result from the

substitution of the percentages used in developing the \$8 constant in the present minimum premium formula (see Table 1) for the percentages shown.

TABLE 3
CALCULATION OF POLICY FEE

Policies Issued in 1924 (excluding Policies "Not Taken") Compared with Expenses Incurred in 1924 as shown in N. Y. Casualty Exhibit 13 Companies Combined

(1)	(2)	Allocation of Expenses in Direct Ratio to Number of Policies Issued		
		(3)	(4)	(5)
	Amount	% of Total	Amount (2) × (3)	Amount per Pol. (4) ÷ 291,965
Number of Policies Issued (excluding Policies not taken).....	291,965	.....	
Payroll Audit Expense.....	\$1,226,148	75	\$919,611	\$3.15
Inspection and Accident Prevention Expense.....	1,073,889	.....	.....	.....
General Administration Expense (excluding Payroll Audit).....	3,877,723	50	1,938,862	6.64
			Net Fee	\$9.79

$\frac{\$9.79 \text{ (Net Charge)}}{.80} = \$12.24 \text{ or approximately } \12 gross charge

The Conference Committee on Revision of Workmen's Compensation Rate Making Formulae which was appointed by the Superintendent of Insurance of New York, developed a policy charge of \$10. This amount was arrived at by substituting 37.8% for the percentage shown in Table 3 as the proportion of general administration expense which might properly be assumed to be proportional to the number of policies. 37.8% is based primarily upon a cost analysis prepared by a large stock company upon its business for calendar year 1925 and produces an amount per policy of \$5.02. The use of 37.8% appears conservative inasmuch as the average premium of the carrier which developed this figure is appreciably greater than that of the 13 companies to the experience of which this percentage was applied.

A minority report of the Conference Committee submitted in connection with the determination of the amount of the mini-

imum charge per policy recommends the adoption of a fee of \$5.00. This amount was arrived at by making a time cost analysis within a single company and assumes 100% efficiency on the part of employees. A substantial portion of the overhead and administration expenses such as executive, administration, financial and supervisory departments were assumed to be chargeable to premium volume only and consequently were not considered in arriving at the amount of charge. An average of six audits per day per auditor were assumed and allowance was made only for biennial audits. The details of the calculation are shown in Table 4.

TABLE 4
CALCULATION OF POLICY EXPENSE CHARGE
Minority Report of Conference Committee

	Underwriting, Accounting and Statistical	Auditing Inside Every Year	Auditing Outside— Every Other Year
Number of Minutes.....	93.0	50.0	35.0
Salary per Minute.....	\$0.0122	\$0.0122	\$0.0169
Salary Cost.....	\$1.14	\$0.61	\$0.59
Overhead Cost.....	\$0.57	\$0.31	\$0.59
Total Cost.....	\$1.71	\$0.92	\$1.18

SUMMARY

	Indicated Cost	Adopted Cost
Underwriting, Accounting and Statistical.....	1.71	2.00
Auditing.....	2.10	2.00
Total Net Cost.....	3.81	4.00
Net Cost Loaded 17½% for pro- duction and 2½% for taxes.....	4.76	5.00

The National Council on Compensation Insurance has adopted a policy charge for expenses of \$10 as recommended in the majority report of the Conference Committee.

A comparison of estimates of the proper minimum charge for administration cost submitted by individual carriers, and shown below, appears to substantiate the estimate of \$5 which is included for this item in the \$10 charge recommended in the majority report of the Conference Committee:

Individual Stock Company Estimate.....	5.34
Individual Mutual Company Estimate.....	1.71
New York State Fund Estimate.....	4.37
California State Fund Estimate.....	5.80
National Bureau Estimate.....	6.64

A similar comparison of estimates with respect to payroll audit costs appears to corroborate the selection of \$3 which is included for this item in the \$10 charge:

Individual Stock Company.....	4.76
Individual Mutual Company....	2.10
California State Fund.....	6.56
National Bureau.....	3.15

The estimate of \$6.56 shown for the California State Fund represents the average audit cost per policy for policies falling within the premium group \$50-\$300, and not the minimum cost.

As the adoption of a fixed minimum charge per policy for expenses is proposed as a means of redistributing expenses and not as a means of increasing the total amount available for expenses, it becomes necessary to revise the expense loading in such a manner as to produce in the aggregate the amount now available. In theory the fixed charge should be applied to every policy regardless of size but for practical reasons it has been deemed advisable to apply the charge only to those policies on which the premium is less than the average annual premium required for qualification for experience rating. The revised loading to be used in conjunction with a policy charge to be applied in this manner may be calculated in accordance with the general formula

$$\frac{eP - [nK + n'(K - c)]}{P - [nK + n'(K - c)]}$$

Where c = average amount realized from constant in minimum premium formula

e = existing expense loading

K = amount of policy charge

n' = number of minimum premium risks

n = number of risks (excluding minimum premium risks) to which policy charge is to apply

P = total actual earned premium for all risks

It is, of course, assumed that the use of a constant in the minimum premium formula will be discontinued concurrently with the adoption of a policy expense charge.

The case with respect to the variations in loss cost with varia-

tions in size of risk is supported by loss ratio experience by premium size of risk. It is not the purpose of this discussion to attempt to determine the causes which bring about the variations in loss costs by size of risk but merely to describe briefly, proposals which have been submitted as possible means of recognizing such differences in loss costs as are indicated.

By way of illustration the experience for New York State for policy years 1924 and 1925 is given in Tables 5 to 14 inclusive. These tabulations show the experience by premium size group separately for non-participating and participating carriers for each policy year and for the two years combined, the combined experience of all carriers for each of the two years and for both years combined, and the experience by industry group by class of carrier for both policy years combined. The experience shown for non-participating carriers is that which was compiled by the National Bureau of Casualty and Surety Underwriters and that shown for participating carriers was compiled by the New York Compensation Inspection Rating Board. The data indicated for minimum premium risks includes all such risks irrespective of the size of premium. However, it should be pointed out in connection with Tables 8 to 13 inclusive that the State Fund did not report minimum premium risks as such but included them in the appropriate premium size group.

The premiums shown in these tabulations are collected premiums, consequently the indicated loss ratio differentials do not accurately reflect the actual conditions. The premium for minimum premium risks includes not only the premium developed by the application of manual rates to payrolls but also the effect of the \$10 constant in the minimum premium formula¹. Other factors which affect the premiums are the off-balance of merit rating plans and changes in manual rates. The experience rating plan produces a net credit in New York State with the result that the premiums shown for risks of \$400 or over² are less than would be produced at manual rates, thereby increasing the loss ratios for such risks and for all risks combined and diminishing the range of loss ratio differentials.

¹The minimum premium formula effective in New York State during the period covered by this experience was $5 \times \text{rate} + \$10$.

²\$400 average annual premium is approximately the premium qualification for experience rating in New York.

However, even upon the basis of collected premiums, there is a pronounced decrease in loss ratio as the size of premium increases. This is apparent in the experience of each policy year and of each class of carrier. Although this trend appears in each industry group there are marked variations among the several groups.

Several methods have been proposed by which the rate making procedure might be modified to recognize indicated differences in loss costs by size of risk. One proposal provided for establishing the rate level at the point indicated by experience of non-experience rated risks and provided for discounts from manual rates to be incorporated into the experience rating plan and to be applied to risks which develop sufficient premium to qualify for experience rating, the amount of the discount to increase as the size of risk increased. The effect of such a plan would be to provide for a uniform level of rates applicable to all non-experience rated risks and would not recognize differences in loss ratio differentials among such risks, although such differences would be recognized on risks which developed sufficient premium to qualify for experience rating.

Another proposed method provided for an increase in the premium of each risk with a payroll below a given amount, by an amount determined by multiplying the rate for such risk by a constant amount of payroll. As the amount to be added to risks of any one class would be uniform the effect of such a plan would be similar to that produced by a graduated percentage loading. Such a plan would in a general way recognize variations in loss ratio differentials on small risks by size as well as by industry. There are practical objections to the proposal due to the difficulty of determining the governing classification and of terminating its application at a particular amount of payroll.

A third proposal, developed by the Conference Committee, has been adopted in New York State. This plan provides for a charge of a flat amount of premium, termed a "loss constant", to be applied to all risks which develop a premium of less than \$400; the amount of the "loss constant" to vary by industry group and the increase in the total premium volume produced thereby to be offset by a reduction in rate level.

The manner in which the values of the "loss constant" and the corresponding reductions in rate level were determined is illustrated in Table 15 and 16. In its calculations the Committee

took into consideration two elements which form a part of the general revision of workmen's compensation rate making formulae but which could be considered independently from loss constants; viz., the effect of the revision of the minimum premium formula³ and the off-balance of the experience rating plan.

The data in Table 15 represent the combined experience of all carriers which reported experience by industry group. In each instance the experience of minimum premium risks has been included in the premium size group "under \$150". Premiums shown in the table are collected premiums.

The details of the calculation of the loss constants and corresponding reductions in rate level are given in Table 16. Brief explanatory notes relative to the table are submitted below:

Column (1) These premiums are actual earned premiums shown in Table 15.

Column (2) In this column the actual premiums of each policy year for the size group "\$400 and over" have been brought to the manual levels of that year by adjusting the premiums for the off-balance of the experience rating plan.

Column (3) Here the manual premiums for each policy year have been brought to the future manual rate level based upon the experience of policy years 1923, 1924, and 1925 on the October 1, 1927 law level.

Column (4) These loss ratios are the ratios of losses shown in Table 15 to premiums on future manual level, column (3).

Column (5) The factors used to develop the premiums in the column are ratios of loss ratios indicated for the group "\$400 and over" to total loss ratios.

Column (6) The factors indicated in this column are ratios of loss ratios of the group "0-399" based upon the premiums in column (5) to total loss ratios indicated in column (4).

Column (7) In this column the manual rate level is increased by factors designed to offset the expected net credits resulting from future experience rating. The excess on risks over \$400 above the amounts indicated in column (5) will be eliminated by experience rating. The deficiency on risks under \$400 below the amounts indicated in column (6) will be made up from minimum premiums and loss constants.

Column (8) The estimated additional premium to be realized from a minimum premium formula of 15 X rate is shown in this column.

³A minimum premium formula of 15 X rate was adopted in New York concurrently with the adoption of loss constants and a policy expense charge.

Column (9) The balance of the deficiency which is to be derived from loss constants is given here.

Column (10) The premiums in this column are total premiums to be realized from the application of the plan.

Column (11) shows loss ratios on the basis of premiums in column (10).

Column (12) The amount of the loss constant to be applied to each policy as shown in this column was obtained by dividing the total amount to be derived from loss constants as shown in column (9) by the number of risks under \$400 as shown in Table 15.

Column (13) The modifications of the manual rate level due to the introduction of loss constants and adjustments to offset the net credits resulting from the application of the experience rating plan are shown in this column.

The actual loss constants and corresponding offsetting reductions in manual rates adopted by the Conference Committee⁴ and approved by the Superintendent of Insurance are as follows:

Industry Group	Loss Constant	Offsetting Reduction in Manual Rates
Manufacturing.....	\$20.00	2.5%
Contracting.....	40.00	5.0
All Other.....	4.00	0.0

The calculations made in Table 16 and the general formula for the calculation of a revised expense loading to be used in conjunction with a policy expense charge, appearing on page 267, are each based upon the assumption that the full amount of the charge will be collected on each risk shown by the experience to fall within the group to which such charge is to be applied. In actual practise these assumptions will not be borne out for the reasons cited below:

1. Changes in rate level subsequent to the period for which experience has been tabulated will affect the number of risks within a given premium group.

2. The introduction of a fixed charge per policy may reasonably be expected to bring about the consolidation of multiple policies covering the operations of one assured.

3. Many of the risks reported in the experience represent

⁴A more comprehensive statement of this entire problem and of conclusions reached with respect to New York State will be found in the "Report of Conference Committee on Revision of Workmen's Compensation Rate Making Formulae" filed with the New York Insurance Department, December 17, 1927.

cancelled or short term policies on which the full amount of the charge presumably will not be collected.

4. In application it probably will be necessary to grade off the charge as the premium approaches the maximum sized risk to which the charge is to apply.

In view of these facts the actual reduction in rate level introduced to offset the effect of a policy charge should be somewhat less than that indicated by the experience.

In a state in which both loss constants and a policy expense charge are to be applied the amount of the expense charge should be reduced to the point where the net amount available from such charge plus that part of the loss constant available for the expenses contemplated by the expense charge will equal the net amount of the expense charge required per policy. For example, the Superintendent of Insurance of New York State approved a net policy expense charge of \$4. It was estimated that the average amount of the loss constants is such that the loading included therein for general administration and audit expense plus the net amount available for such expenses from a gross policy expense charge of \$3 are equivalent to a net amount of \$4, or a gross charge of \$5.

The size of risk experience which has been compiled for certain states does not appear to indicate a need for the redistribution of loss costs by size of risk within such states. In those states in which the experience does not indicate any very appreciable loss ratio differential by size of risk, it is possible that a comparison of manual loss ratios might alter the indications appreciably. It may be that a comparison of loss ratios by size measured in terms of exposure would indicate more or less uniform results from state to state. Experience in such form, however, is not available.

The necessity for a redistribution of expenses by size of risk to be applied to all states is apparent even for those states which develop a dependable volume of experience and which do not indicate the need for a redistribution of loss costs by size of risk. No attempt has been made in this discussion to explain the possible causes underlying the variations in loss ratio experience by size of risk since such explanations as have been put forth have been conjectural. It is to be hoped that further study of this problem will disclose the underlying causes.

TABLE 5
NEW YORK COMPENSATION EXPERIENCE BY SIZE OF RISK

Compiled by National Bureau 8/15/27

Policy Year 1924

Experience of 24 Stock Companies Reported to the National Bureau

All Industry Groups Combined

Premium Group	Number of Risks	Premium Earned	Losses Incurred	Loss Ratio			% of Total Risks			% of Total Premium			Avg. Premium Per Risk			Loss Ratio Differential*
				Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	
Minimum Premium	43,309	797,505	590,569	.741	.741	.673	28.20	28.20	100%	3.06	3.06	100%	\$18	\$18	\$170	1.101
0— 24	24,122	403,406	358,648	.889	.790	.671	15.71	43.91	71.80	1.55	4.61	96.94	17	18	229	1.321
25— 49	28,098	1,013,569	953,395	.941	.859	.667	18.30	62.21	56.09	3.89	8.50	95.39	36	23	288	1.398
50— 74	15,067	925,409	754,712	.816	.846	.656	9.81	72.02	37.79	3.55	12.05	91.50	61	28	411	1.212
75— 99	9,006	778,574	643,931	.827	.842	.649	5.86	77.88	27.98	2.99	15.04	87.95	86	33	533	1.229
100— 149	9,974	1,213,873	997,839	.822	.838	.643	6.50	84.38	22.12	4.66	19.70	84.96	122	40	651	1.221
150— 199	5,445	944,876	712,875	.754	.825	.633	3.55	87.93	15.62	3.63	23.33	80.30	174	45	872	1.120
200— 299	5,916	1,444,786	1,080,400	.748	.810	.627	3.85	91.78	12.07	5.55	28.88	76.67	244	53	1,077	1.111
300— 399	3,206	1,113,333	773,513	.695	.795	.617	2.09	93.87	8.22	4.28	33.16	71.12	347	60	1,467	1.033
400— 499	1,915	852,608	587,537	.689	.786	.612	1.25	95.12	6.13	3.28	36.44	66.84	445	65	1,848	1.024
500— 999	3,757	2,640,709	1,696,687	.643	.754	.609	2.45	97.57	4.88	10.14	46.58	63.56	703	81	2,206	.955
1000— 1999	1,942	2,698,255	1,640,403	.608	.728	.602	1.26	98.83	2.43	10.36	56.94	53.42	1,389	98	3,713	.903
2000— 2999	690	1,672,864	1,118,724	.669	.722	.601	.45	99.28	1.17	6.42	63.36	43.06	2,424	108	6,212	.994
3000— 4999	509	1,949,277	1,112,192	.571	.706	.589	.33	99.61	.72	7.49	70.85	36.64	3,830	121	8,556	.848
5000— 9999	372	2,476,890	1,438,739	.581	.691	.593	.24	99.85	.39	9.51	80.36	29.15	6,658	136	12,526	.863
10000— 19999	146	1,966,538	1,262,459	.642	.687	.600	.10	99.95	.15	7.55	87.91	19.64	13,469	149	21,855	.954
20000— 29999	51	1,262,119	734,184	.582	.681	.573	.03	99.98	.05	4.85	92.76	12.09	24,747	157	35,766	.865
30000 & Over	37	1,885,330	1,069,200	.567	.673	.567	.02	100%	.02	7.24	100%	7.24	50,955	170	50,955	.842
Total	153,562	26,039,921	17,526,007	.673	..	..	100%	..	..	100%	..	..	170	..	..	1.000
Five Size Groups																
Minimum Premium	43,309	797,505	590,569	.741	.741	.673	28.20	28.20	100%	3.06	3.06	100%	\$18	\$18	\$170	1.101
0— 399	100,834	7,837,826	6,275,313	.801	.795	.671	65.66	93.86	71.80	30.10	33.16	96.94	73	60	229	1.190
400— 999	5,672	3,493,317	2,284,224	.654	.754	.612	3.69	97.55	6.14	13.42	46.58	66.84	616	81	1,848	.972
1000— 4999	3,141	6,320,396	3,871,319	.613	.706	.602	2.05	99.60	2.45	24.27	70.85	53.42	2,012	121	3,713	.911
5000 & Over	606	7,590,877	4,504,582	.593	.673	.593	.40	100%	.40	29.15	100%	29.15	12,526	170	12,526	.881
Total	153,562	26,039,921	17,526,007	.673	..	..	100%	..	..	100%	..	..	170	..	..	1.000

*Loss Ratio differentials are the loss ratios for the various size groups in the Individual Group column divided by the average loss ratio for all size groups combined.

TABLE 6
NEW YORK COMPENSATION EXPERIENCE BY SIZE OF RISK
Policy Year 1925

Compiled by National Bureau 8/15/27

Experience of 27 Stock Companies Reported to the National Bureau

All Industry Groups Combined

Premium Group	Number of Risks	Premium Earned	Losses Incurred	Loss Ratio			% of Total Risks			% of Total Premium			Avg. Premium Per Risk			Loss Ratio Differential*
				Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	
Minimum Premium	52,022	1,022,683	538,346	.526	.526	.585	27.83	27.83	100%	2.79	2.79	100%	\$20	\$20	\$196	.899
0— 24	27,010	450,379	421,464	.936	.652	.586	14.45	42.28	72.17	1.23	4.02	97.21	17	19	264	1.600
25— 49	32,731	1,174,100	1,034,756	.881	.753	.582	17.51	59.79	57.72	3.20	7.22	95.98	36	24	326	1.506
50— 74	18,402	1,120,842	779,424	.695	.736	.571	9.84	69.63	40.21	3.06	10.28	92.78	61	29	453	1.188
75— 99	11,297	974,183	739,116	.759	.741	.567	6.04	75.67	30.37	2.66	12.94	89.72	86	34	580	1.297
100— 149	13,240	1,615,441	1,178,510	.730	.738	.561	7.08	82.75	24.33	4.40	17.34	87.06	122	41	702	1.248
150— 199	7,071	1,220,360	816,209	.669	.727	.552	3.78	86.53	17.25	3.33	20.67	82.66	173	47	940	1.144
200— 299	7,930	1,933,399	1,236,172	.639	.709	.547	4.24	90.77	13.47	5.27	25.94	79.33	244	56	1,156	1.092
300— 399	4,326	1,495,449	916,708	.613	.696	.541	2.32	93.09	9.23	4.08	30.02	74.06	346	63	1,576	1.048
400— 499	2,558	1,146,098	720,317	.628	.690	.537	1.37	94.46	6.91	3.12	33.14	69.98	448	69	1,988	1.074
500— 999	5,270	3,648,779	2,025,510	.555	.659	.532	2.82	97.28	5.54	9.95	43.09	66.86	692	87	2,368	.949
1000— 1999	2,562	3,612,462	1,853,746	.513	.632	.528	1.37	98.65	2.72	9.85	52.94	56.91	1,410	105	4,104	.877
2000— 2999	905	2,185,597	1,187,902	.544	.623	.532	.48	99.13	1.35	5.96	58.90	47.06	2,415	117	6,839	.930
3000— 4999	730	2,780,217	1,374,836	.495	.608	.530	.39	99.52	.87	7.58	66.48	41.10	3,809	131	9,311	.846
5000— 9999	518	3,603,616	1,845,750	.512	.596	.538	.28	99.80	.48	9.82	76.30	33.52	6,957	150	13,830	.875
10000—19999	221	2,974,978	1,612,004	.542	.590	.549	.12	99.92	.20	8.11	84.41	23.70	13,461	166	23,427	.926
20000—29999	76	1,855,660	1,150,767	.620	.592	.552	.04	99.96	.08	5.06	89.47	15.59	24,417	176	38,108	1.060
30000 & Over	74	3,860,610	2,005,033	.519	.585	.519	.04	100%	.04	10.53	100%	10.53	52,170	196	52,173	.887
Total	186,943	36,674,853	21,436,570	.585	..	..	100%	..	..	100%	..	..	196	..	..	1.000
Five Size Groups																
Minimum Premium	52,022	1,022,683	538,346	.526	.526	.585	27.83	27.83	100%	2.79	2.79	100%	\$20	\$20	\$196	.899
0— 399	122,007	9,984,153	7,122,359	.713	.696	.586	65.26	93.09	72.17	27.22	30.01	97.21	82	63	264	1.219
400— 999	7,828	4,794,877	2,745,827	.573	.659	.537	4.19	97.28	6.91	13.08	43.09	69.99	613	87	1,988	.979
1000— 4999	4,197	8,578,276	4,416,484	.515	.608	.528	2.25	99.53	2.72	23.39	66.48	56.91	2,044	131	4,104	.880
5000 & Over	889	12,294,864	6,613,554	.538	.585	.538	.47	100%	.47	33.52	100%	33.52	13,830	196	13,830	.920
Total	186,943	36,674,853	21,436,570	.585	..	..	100%	..	..	100%	..	..	196	..	..	1.000

*Loss Ratio differentials are the loss ratios for the various size groups in the Individual Group column divided by the average loss ratio for all size groups combined.

TABLE 7
NEW YORK COMPENSATION EXPERIENCE BY SIZE OF RISK
Policy Years 1924 and 1925 Combined

Compiled by National Bureau 8/15/27

Experience of Stock Companies Reported to the National Bureau*

All Industry Groups Combined

Premium Group	Number of Risks	Premium Earned	Losses Incurred	Loss Ratio			% of Total Risks			% of Total Premium			Avg. Premium Per Risk			Loss Ratio Differential†
				Individual Group	Cumulative Down	Cumulative Up	Individual Group	Cumulative Down	Cumulative Up	Individual Group	Cumulative Down	Cumulative Up	Individual Group	Cumulative Down	Cumulative Up	
Minimum Premium	95,331	1,820,188	1,128,915	.620	.620	.621	28.00	28.00	100%	2.90	2.90	100%	\$19	\$19	\$184	.998
0— 24	51,132	853,785	780,112	.914	.714	.621	15.02	43.02	72.00	1.36	4.26	97.10	17	18	248	1.472
25— 49	60,829	2,187,669	1,988,151	.909	.802	.617	17.86	60.88	56.98	3.49	7.75	95.74	36	23	309	1.464
50— 74	33,469	2,046,251	1,534,136	.750	.786	.606	9.83	70.71	39.12	3.26	11.01	92.25	61	29	434	1.208
75— 99	20,303	1,752,757	1,383,047	.789	.787	.601	5.96	76.67	29.29	2.80	13.81	88.99	86	33	560	1.271
100— 149	23,214	2,829,314	2,176,349	.769	.782	.595	6.82	83.49	23.33	4.51	18.32	86.19	122	40	680	1.238
150— 199	12,516	2,165,236	1,529,084	.706	.770	.585	3.68	87.17	16.51	3.45	21.77	81.68	173	46	911	1.137
200— 299	13,846	3,378,185	2,316,572	.686	.754	.580	4.07	91.24	12.83	5.39	27.16	78.23	244	55	1,122	1.105
300— 399	7,532	2,608,782	1,690,221	.648	.740	.572	7.21	93.45	8.76	4.16	31.32	72.84	346	62	1,530	1.043
400— 499	4,473	1,998,706	1,307,854	.654	.732	.567	1.31	94.76	6.55	3.19	34.51	68.68	447	67	1,929	1.053
500— 999	9,027	6,289,488	3,722,197	.592	.700	.563	2.65	97.41	5.24	10.03	44.54	65.49	697	84	2,300	.953
1000— 1999	4,504	6,310,717	3,494,149	.554	.673	.558	1.32	98.73	2.59	10.06	54.60	55.46	1,401	102	3,938	.892
2000— 2999	1,595	3,858,461	2,306,626	.598	.666	.559	.47	99.20	1.27	6.15	60.75	45.40	2,419	113	6,577	.963
3000— 4999	1,239	4,729,494	2,487,028	.526	.650	.553	.36	99.56	.60	7.54	68.29	39.25	3,817	126	9,003	.847
5000— 9999	890	6,080,506	3,284,489	.540	.636	.559	.26	99.82	.44	9.70	77.99	31.71	6,832	144	13,301	.870
10000—19999	367	4,941,516	2,874,463	.582	.631	.567	.11	99.93	.18	7.88	85.87	22.01	13,465	158	22,819	.937
20000—29999	127	3,117,779	1,884,951	.605	.630	.559	.04	99.97	.07	4.97	90.84	14.13	24,548	167	37,243	.974
30000 & Over	111	5,745,940	3,074,233	.535	.621	.535	.03	100%	.03	9.16	100%	9.16	51,765	184	51,765	.862
Total	340,505	62,714,774	38,962,577	.621	..	..	100%	..	..	100%	..	..	184	..	..	1.000
Five Size Groups																
Minimum Premium	95,331	1,820,188	1,128,915	.620	.620	.621	28.00	28.00	100%	2.90	2.90	100%	\$19	\$19	\$184	.998
0— 399	222,841	17,821,979	13,397,672	.752	.740	.621	65.44	93.44	72.00	28.42	31.32	97.10	80	62	248	1.211
400— 999	13,500	8,288,194	5,030,051	.607	.700	.567	3.96	97.40	6.56	13.21	44.53	68.08	614	84	1,929	.977
1000— 4999	7,338	14,898,672	8,287,803	.556	.650	.558	2.16	99.56	2.60	23.76	68.29	55.47	2,030	126	3,938	.895
5000 & Over	1,495	19,885,741	11,118,136	.559	.621	.559	.44	100%	.44	31.71	100%	31.71	13,301	184	13,301	.900
Total	340,505	62,714,774	38,962,577	.621	..	..	100%	..	..	100%	..	..	184	..	..	1.000

†Loss Ratio differentials are the loss ratios for the various size groups in the Individual Group column divided by the average loss ratio for all size groups combined.

*24 companies for policy year 1924 and 27 companies for policy year 1925.

TABLE 8
NEW YORK COMPENSATION EXPERIENCE BY SIZE OF RISK
Policy Year 1924

Compiled by National Bureau 8/15/27
Experience of Mutual Companies and State Fund

All Industry Groups Combined

Premium Group	Number of Risks	Premium Earned	Losses Incurred	Loss Ratio			% of Total Risks			% of Total Premium			Avg. Premium Per Risk			Loss Ratio Differential*
				Individual Group	Cumulative Down	Cumulative Up	Individual Group	Cumulative Down	Cumulative Up	Individual Group	Cumulative Down	Cumulative Up	Individual Group	Cumulative Down	Cumulative Up	
Minimum Premium	187	4,254	362	.085	.085	.630	.97	.97	100 %	.05	.05	100 %	\$23	\$23	\$444	.135
0— 24	7,486	155,849	191,619	1.230	1.199	.631	38.68	39.65	99.03	1.81	1.86	99.95	21	21	448	1.952
25— 49	738	27,534	6,378	.232	1.057	.620	3.81	43.46	60.35	.32	2.18	98.14	37	22	722	.368
50— 74	1,735	105,426	94,202	.894	.998	.621	8.96	52.42	56.54	1.23	3.41	97.82	61	29	768	1.419
75— 99	1,202	103,855	96,248	.927	.980	.617	6.21	58.63	47.58	1.21	4.62	96.59	86	35	902	1.471
100— 149	1,598	195,372	178,710	.915	.958	.613	8.26	66.89	41.37	2.27	6.89	95.38	122	46	1,024	1.452
150— 199	1,000	173,552	106,949	.616	.881	.606	5.17	72.06	33.11	2.02	8.91	93.11	174	55	1,249	.978
200— 299	1,271	312,021	225,208	.722	.835	.606	6.57	78.63	27.94	3.63	12.54	91.09	245	71	1,448	1.146
300— 399	729	251,434	157,733	.627	.795	.601	3.77	82.40	21.37	2.93	15.47	87.46	345	83	1,818	.995
400— 499	481	214,353	121,395	.566	.764	.600	2.49	84.89	17.60	2.49	17.96	84.53	446	94	2,133	.898
500— 999	1,227	863,509	644,090	.746	.757	.601	6.34	91.23	15.11	10.04	28.00	82.04	704	136	2,411	1.184
1000— 1999	833	1,169,699	698,408	.597	.705	.581	4.30	95.53	8.77	13.61	41.61	72.00	1,404	193	3,645	.948
2000— 2999	323	787,427	429,922	.546	.676	.577	1.67	97.20	4.47	9.16	50.77	58.39	2,438	232	5,802	.867
3000— 4999	247	947,796	580,014	.612	.665	.583	1.28	98.48	2.80	11.03	61.80	49.23	3,837	279	7,807	.971
5000— 9999	177	1,108,519	677,742	.611	.656	.575	.91	99.39	1.52	12.90	74.70	38.20	6,263	334	11,131	.970
10000—19999	87	1,181,820	706,514	.598	.647	.556	.45	99.84	.61	13.75	88.45	25.30	13,584	393	18,433	.949
20000—29999	22	526,432	247,681	.470	.635	.506	.11	99.95	.16	6.12	94.57	11.55	23,929	420	32,042	.746
30000 & Over	9	466,855	254,938	.546	.630	.546	.05	100 %	.05	5.43	100 %	5.43	51,873	444	51,873	.867
Total.....	19,352	8,595,707	5,418,113	.630	..	..	100 %	..	..	100 %	..	..	444	..	..	1.000
Five Size Groups																
Minimum Premium	187	4,254	362	.085	.085	.630	.97	.97	100 %	.05	.05	100 %	\$23	\$23	\$444	.135
0— 399	15,759	1,325,043	1,057,047	.798	.795	.631	81.43	82.40	99.03	15.42	15.47	99.95	84	83	448	1.267
400— 999	1,708	1,077,862	765,485	.710	.757	.600	8.83	91.23	17.60	12.54	28.01	84.53	631	136	2,133	1.127
1000— 4999	1,403	2,904,922	1,708,344	.588	.665	.581	7.25	98.48	8.77	33.79	61.80	71.99	2,071	279	3,645	.933
5000 & Over	295	3,283,626	1,886,875	.575	.630	.575	1.52	100 %	1.52	38.20	100 %	38.20	11,131	444	11,131	.913
Total.....	19,352	8,595,707	5,418,113	.630	..	..	100 %	..	..	100 %	..	..	444	..	..	1.000

*Loss Ratio differentials are the loss ratios for the various size groups in the Individual Group column divided by the average loss ratio for all size groups combined.

TABLE 9
NEW YORK COMPENSATION EXPERIENCE BY SIZE OF RISK
Policy Year 1925

Compiled by National Bureau 8/15/27

Experience of Mutual Companies and State Fund

All Industry Groups Combined

Premium Group	Number of Risks	Premium Earned	Losses Incurred	Loss Ratio			% of Total Risks			% of Total Premium			Avg. Premium Per Risk			Loss Ratio Differential*
				Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	
Minimum Premium	315	6,188	2,846	.460	.460	.571	1.25	1.25	100%	.04	.04	100%	\$20	\$20	\$572	.806
0— 24	6,372	91,147	65,663	.720	.704	.571	25.34	26.59	98.75	.63	.67	99.96	14	15	579	1.281
25— 49	3,082	110,030	94,304	.857	.785	.570	12.26	38.85	73.41	.77	1.44	99.33	36	21	774	1.501
50— 74	2,273	138,235	177,841	1.287	.986	.568	9.04	47.89	61.15	.96	2.40	98.56	61	29	922	2.254
75— 99	1,469	126,544	106,748	.844	.948	.561	5.84	53.73	52.11	.88	3.28	97.60	86	35	1,071	1.478
100— 149	2,078	242,712	196,824	.811	.901	.558	8.26	61.99	46.27	1.69	4.97	96.72	117	46	1,195	1.420
150— 199	1,439	249,302	156,360	.627	.830	.553	5.72	67.71	38.01	1.73	6.70	95.03	173	57	1,429	1.098
200— 299	1,668	412,262	228,542	.554	.748	.552	6.63	74.34	32.29	2.87	9.57	93.30	247	74	1,652	.970
300— 399	1,124	388,133	237,871	.613	.718	.552	4.47	78.81	25.66	2.70	12.27	90.43	345	89	2,015	1.074
400— 499	760	337,993	242,722	.718	.718	.550	3.02	81.83	21.19	2.35	14.62	87.73	445	102	2,367	1.257
500— 999	1,887	1,357,459	829,201	.611	.676	.546	7.50	89.33	18.17	9.44	24.06	85.38	719	154	2,687	1.070
1000— 1999	1,279	1,822,272	1,113,896	.611	.654	.537	5.09	94.42	10.67	12.67	36.73	75.94	1,425	222	4,072	1.070
2000— 2999	491	1,194,599	673,096	.563	.637	.523	1.95	96.37	5.58	8.31	45.04	63.27	2,433	267	6,485	.986
3000— 4999	412	1,610,153	845,917	.525	.615	.516	1.64	98.01	3.63	11.20	56.24	54.96	3,908	328	8,666	.919
5000— 9999	314	2,163,596	1,133,303	.524	.596	.514	1.25	99.26	1.99	15.05	71.29	43.76	6,890	411	12,586	.918
10000— 19999	124	1,773,139	977,774	.551	.589	.509	.49	99.75	.74	12.33	83.62	28.71	14,300	479	22,201	.965
20000— 29999	29	689,780	324,570	.471	.583	.477	.12	99.87	.25	4.79	88.41	16.38	23,786	506	38,005	.825
30000 & Over	33	1,666,538	800,059	.480	.571	.480	.13	100%	.13	11.59	100%	11.59	50,501	572	50,501	.841
Total	25,149	14,380,082	8,207,537	.571	..	..	100%	..	..	100%	..	..	572	..	..	1.000
Five Size Groups																
Minimum Premium	315	6,188	2,846	.460	.460	.571	1.25	1.25	100%	.04	.04	100%	\$20	\$20	\$572	.806
0— 399	19,505	1,758,365	1,264,153	.719	.718	.571	77.56	78.81	98.75	12.23	12.27	99.96	90	89	579	1.259
400— 999	2,647	1,695,452	1,071,923	.632	.676	.550	10.52	89.33	21.19	11.79	24.06	87.73	641	154	2,367	1.107
1000— 4999	2,182	4,627,024	2,632,909	.569	.615	.537	8.68	98.01	10.67	32.18	56.24	75.94	2,121	328	4,072	.996
5000 & Over	500	6,293,053	3,235,706	.514	.571	.514	1.99	100%	1.99	43.76	100%	43.76	12,586	572	12,586	.900
Total	25,149	14,380,082	8,207,537	.571	..	..	100%	..	..	100%	..	..	572	..	..	1.000

*Loss Ratio differentials are the loss ratios for the various size groups in the Individual Group column divided by the average loss ratio for all size groups combined.

TABLE 10
NEW YORK COMPENSATION EXPERIENCE BY SIZE OF RISK
Policy Years 1924 & 1925 Combined

Compiled by National Bureau 8/15/27

Experience of Mutual Companies and State Fund

All Industry Groups Combined

Premium Group	Number of Risks	Premium Earned	Losses Incurred	Loss Ratio			% of Total Risks			% of Total Premium			Avg. Premium Per Risk			Loss Ratio Differential*
				Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	
Minimum Premium	502	10,442	3,208	.307	.307	.593	1.13	1.13	100%	.05	.05	100%	\$21	\$21	\$516	.518
0— 24	13,858	246,996	257,282	1.042	1.012	.593	31.14	32.27	98.87	1.08	1.13	99.95	18	18	522	1.757
25— 49	3,820	137,564	100,682	.732	.914	.588	8.59	40.86	67.73	.60	1.73	98.87	36	22	754	1.234
50— 74	4,008	243,661	272,043	1.116	.991	.587	9.01	49.87	59.14	1.06	2.79	98.27	61	29	858	1.882
75— 99	2,671	230,399	202,996	.881	.962	.582	6.00	55.87	50.13	1.00	3.79	97.21	86	35	1,001	1.486
100— 149	3,676	438,084	375,534	.857	.927	.579	8.26	64.13	44.13	1.91	5.70	96.21	119	46	1,125	1.445
150— 199	2,439	422,854	263,309	.623	.853	.573	5.48	69.61	35.87	1.84	7.54	94.30	173	56	1,357	1.051
200— 299	2,939	724,283	453,750	.626	.786	.572	6.61	76.22	30.39	3.15	10.69	92.46	246	72	1,571	1.056
300— 399	1,853	639,567	395,604	.619	.751	.570	4.16	80.38	23.78	2.78	13.47	89.31	345	87	1,938	1.044
400— 499	1,241	552,346	364,117	.659	.737	.568	2.79	83.17	19.62	2.40	15.87	86.53	445	99	2,276	1.111
500— 999	3,114	2,220,968	1,473,291	.663	.709	.566	7.00	90.17	18.83	9.67	25.54	84.13	713	146	2,579	1.118
1000— 1999	2,112	2,991,971	1,812,304	.606	.674	.553	4.75	94.92	9.83	13.02	38.56	74.46	1,417	210	3,906	1.022
2000— 2999	814	1,982,026	1,103,018	.557	.653	.542	1.83	96.75	5.08	8.63	47.19	61.44	2,435	252	6,224	.939
3000— 4999	659	2,557,949	1,425,931	.557	.635	.540	1.48	98.23	3.25	11.13	58.32	52.81	3,882	307	8,346	.939
5000— 9999	491	3,272,115	1,811,045	.553	.619	.535	1.10	99.33	1.77	14.24	72.56	41.68	6,064	377	12,046	.933
10000—19999	211	2,954,959	1,684,288	.570	.611	.525	.47	99.80	.67	12.86	85.42	27.44	14,005	442	20,739	.961
20000—29999	51	1,216,212	572,251	.471	.603	.486	.11	99.91	.20	5.29	90.71	14.58	23,847	469	36,017	.794
30000 & Over	42	2,133,393	1,054,997	.495	.593	.495	.09	100%	.09	9.29	100%	9.29	50,795	516	50,795	.835
Total.....	44,501	22,975,789	13,625,650	.593	..	..	100%	..	..	100%	..	..	516	..	..	1.000
Five Size Groups																
Minimum Premium	502	10,442	3,208	.307	.307	.593	1.13	1.13	100%	.05	.05	100%	\$21	\$21	\$516	.518
0— 399	35,264	3,083,408	2,321,200	.753	.751	.593	79.24	80.37	98.87	13.42	13.47	99.95	87	87	522	1.270
400— 999	4,355	2,773,314	1,837,408	.663	.709	.568	9.79	90.16	19.63	12.07	25.54	86.53	637	146	2,276	1.118
1000— 4999	3,585	7,731,946	4,341,253	.576	.635	.553	8.05	98.21	9.84	32.78	58.32	74.46	2,101	307	3,906	.971
5000 & Over	795	9,576,679	5,122,581	.535	.593	.535	1.79	100%	1.79	41.68	100%	41.68	12,046	516	12,046	.902
Total.....	44,501	22,975,789	13,625,650	.593	..	..	100%	..	..	100%	..	..	516	..	..	1.000

*Loss Ratio differentials are the loss ratios for the various size groups in the Individual Group column divided by the average loss ratio for all size groups combined.

NEW YORK COMPENSATION EXPERIENCE BY SIZE OF RISK

Compiled by National Bureau 8/15/27

Policy Year 1924

Experience of Stock Companies, Mutuals and State Fund Combined

All Industry Groups Combined

Premium Group	Number of Risks	Premium Earned	Losses Incurred	Loss Ratio			% of Total Risks			% of Total Premium			Avg. Premium Per Risk			Loss Ratio Differential*
				Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	
Minimum Premium	43,496	801,759	590,931	.737	.737	.662	25.15	25.15	100%	2.32	2.32	100%	\$18	\$18	\$200	1.113
0— 24	31,608	559,255	550,267	.984	.838	.661	18.28	43.43	74.85	1.61	3.93	97.68	18	18	261	1.486
25— 49	28,336	1,041,103	959,773	.922	.875	.655	16.68	60.11	56.57	3.01	6.94	96.07	36	23	340	1.393
50— 74	16,802	1,030,835	848,914	.824	.859	.647	9.72	69.83	39.89	2.98	9.92	93.06	61	28	467	1.245
75— 99	10,208	882,429	740,179	.839	.855	.641	5.90	75.73	30.17	2.55	12.47	90.08	86	33	598	1.267
100— 149	11,572	1,409,245	1,176,549	.835	.850	.635	6.69	82.42	24.27	4.07	16.54	87.53	122	40	723	1.261
150— 199	6,445	1,118,428	819,824	.733	.831	.625	3.73	86.15	17.58	3.23	19.77	83.46	174	46	951	1.107
200— 299	7,187	1,756,807	1,305,608	.743	.813	.621	4.16	90.31	13.85	5.07	24.84	80.23	244	55	1,161	1.122
300— 399	3,935	1,364,767	931,246	.682	.795	.613	2.28	92.59	9.69	3.94	28.78	75.16	347	62	1,553	1.030
400— 499	2,396	1,066,961	708,932	.664	.783	.609	1.39	93.98	7.41	3.08	31.86	71.22	445	68	1,924	1.003
500— 999	4,984	3,504,218	2,340,777	.668	.755	.606	2.88	96.86	6.02	10.12	41.98	68.14	703	87	2,263	1.009
1000— 1999	2,775	3,867,954	2,338,811	.605	.723	.596	1.60	98.46	3.14	11.17	53.15	58.02	1,394	108	3,691	.914
2000— 2999	1,013	2,460,291	1,548,646	.629	.712	.593	.58	99.04	1.54	7.10	60.25	46.85	2,429	122	6,079	.950
3000— 4999	756	2,897,073	1,692,206	.584	.697	.587	.44	99.48	.96	8.36	68.61	39.75	3,832	138	8,311	.882
5000— 9999	549	3,585,409	2,116,481	.590	.683	.588	.32	99.80	.52	10.35	78.96	31.39	6,531	158	12,069	.891
10000—19999	233	3,148,358	1,968,973	.625	.677	.586	.13	99.93	.20	9.09	88.05	21.04	13,512	176	20,708	.944
20000—29999	73	1,788,551	981,865	.549	.670	.557	.04	99.97	.07	5.16	93.21	11.95	24,501	187	34,796	.829
30000 & Over	46	2,352,185	1,324,138	.563	.662	.563	.03	100%	.03	6.79	100%	6.79	51,134	200	51,134	.850
Total.....	172,914	34,635,628	22,944,120	.662	..	..	100%	..	..	100%	..	..	200	..	..	1.000
Five Size Groups																
Minimum Premium	43,496	801,759	590,931	.737	.737	.662	25.15	25.15	100%	2.32	2.32	100%	\$18	\$18	\$200	1.113
0— 399	116,593	9,162,869	7,332,360	.800	.795	.661	67.44	92.59	74.85	26.46	28.78	97.68	79	62	261	1.208
400— 999	7,380	4,571,179	3,049,709	.667	.755	.609	4.27	96.86	7.41	13.20	41.98	71.22	619	87	1,924	1.008
1000— 4999	4,544	9,225,318	5,579,663	.605	.697	.596	2.62	99.48	3.14	26.63	68.61	58.02	2,030	138	3,691	.914
5000 & Over	901	10,874,503	6,391,457	.588	.662	.588	.52	100%	.52	31.39	100%	31.39	12,069	200	12,069	.888
Total.....	172,914	34,635,628	22,944,120	.662	..	..	100%	..	..	100%	..	..	200	..	..	1.000

*Loss Ratio differentials are the loss ratios for the various size groups in the Individual Group column divided by the average loss ratio for all size groups combined.

TABLE 12
NEW YORK COMPENSATION EXPERIENCE BY SIZE OF RISK
Policy Year 1925

Compiled by National Bureau 8/15/27

Experience of Stock Companies, Mutuals and State Fund Combined

All Industry Groups Combined

Premium Group	Number of Risks	Premium Earned	Losses Incurred	Loss Ratio			% of Total Risks			% of Total Premium			Avg. Premium Per Risk			Loss Ratio Differential*
				Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	Individual Group	Cumulated Down	Cumulated Up	
Minimum Premium	52,337	1,028,871	541,192	.526	.526	.581	24.68	24.68	100%	2.01	2.01	100%	\$20	\$20	\$241	.905
0— 24	33,382	541,526	487,127	.900	.655	.582	15.74	40.42	75.32	1.06	3.07	97.99	16	18	313	1.549
25— 49	35,813	1,284,130	1,129,060	.879	.756	.578	16.89	57.31	59.58	2.51	5.58	96.93	36	23	392	1.513
50— 74	20,675	1,259,077	957,265	.760	.757	.570	9.75	67.06	42.69	2.47	8.05	94.42	61	29	532	1.308
75— 99	12,766	1,100,727	845,864	.768	.760	.565	6.02	73.08	32.94	2.16	10.21	91.95	86	34	672	1.322
100— 149	15,318	1,858,153	1,375,334	.740	.754	.560	7.22	80.30	26.92	3.64	13.85	89.79	121	42	803	1.274
150— 199	8,510	1,469,662	972,569	.662	.739	.553	4.01	84.31	19.70	2.88	16.73	86.15	173	48	1,052	1.139
200— 299	9,598	2,345,661	1,464,714	.624	.714	.549	4.53	88.84	15.69	4.59	21.32	83.27	244	58	1,277	1.074
300— 399	5,450	1,883,582	1,154,579	.613	.699	.544	2.57	91.41	11.16	3.69	25.01	78.68	346	66	1,695	1.055
400— 499	3,318	1,484,091	963,039	.649	.694	.541	1.56	92.97	8.59	2.91	27.92	74.99	447	72	2,099	1.117
500— 999	7,157	5,006,238	2,854,711	.570	.662	.537	3.37	96.34	7.03	9.80	37.72	72.08	699	94	2,466	.981
1000— 1999	3,841	5,434,734	2,967,642	.546	.636	.532	1.81	98.15	3.66	10.64	48.36	62.28	1,415	119	4,093	.940
2000— 2999	1,396	3,380,196	1,860,998	.551	.626	.529	.66	98.81	1.85	6.62	54.98	51.64	2,421	134	6,712	.948
3000— 4999	1,142	4,390,370	2,220,753	.506	.610	.525	.54	99.35	1.19	8.60	63.58	45.02	3,844	154	9,079	.871
5000— 9999	832	5,767,212	2,979,053	.517	.596	.530	.39	99.74	.65	11.30	74.88	36.42	6,932	181	13,382	.890
10000— 19999	345	4,748,117	2,589,778	.545	.590	.536	.16	99.90	.26	9.30	84.18	25.12	13,763	203	23,017	.938
20000— 29999	105	2,545,440	1,475,337	.580	.590	.530	.05	99.95	.10	4.99	89.17	15.82	24,242	215	38,078	.998
30000 & Over	107	5,527,148	2,805,092	.508	.581	.508	.05	100%	.05	10.83	100%	10.83	51,656	241	51,656	.874
Total.....	212,092	51,054,935	29,644,107	.581	..	..	100%	..	..	100%	..	..	241	..	..	1.000
Five Size Groups																
Minimum Premium	52,337	1,028,871	541,192	.526	.526	.581	24.68	24.68	100%	2.01	2.01	100%	\$ 20	\$20	\$241	.905
0— 399	141,512	11,742,518	8,386,512	.714	.699	.582	66.72	91.40	75.32	23.00	25.01	97.99	83	66	313	1.229
400— 999	10,475	6,490,329	3,817,750	.588	.662	.541	4.94	96.34	8.60	12.71	37.72	74.99	620	94	2,099	1.012
1000— 4999	6,379	13,205,300	7,049,393	.534	.610	.532	3.01	99.35	3.66	25.87	63.59	62.28	2,070	154	4,093	.919
5000 & Over	1,389	18,587,917	9,849,260	.530	.581	.530	.65	100%	.65	36.41	100%	36.41	13,382	241	13,382	.912
Total.....	212,092	51,054,935	29,644,107	.581	..	..	100%	..	..	100%	..	..	241	..	..	1.000

*Loss Ratio differentials are the loss ratios for the various size groups in the Individual Group column divided by the average loss ratio for all size groups

NEW YORK COMPENSATION EXPERIENCE BY SIZE OF RISK

Compiled by National Bureau 8/15/27

Policy Years 1924 & 1925 Combined

Experience of Stock Companies, Mutuals and State Fund Combined

All Industry Groups Combined

Premium Group	Number of Risks	Premium Earned	Losses Incurred	Loss Ratio			% of Total Risks			% of Total Premium			Avg. Premium Per Risk			Loss Ratio Differential*
				Individual Group	Cumulative Down	Cumulative Up	Individual Group	Cumulative Down	Cumulative Up	Individual Group	Cumulative Down	Cumulative Up	Individual Group	Cumulative Down	Cumulative Up	
Minimum Premium	95,833	1,830,630	1,132,123	.618	.618	.614	24.89	24.89	100%	2.14	2.14	100%	\$19	\$19	\$223	1.007
0— 24	64,990	1,100,781	1,037,394	.942	.740	.614	16.88	41.77	75.11	1.28	3.42	97.86	17	18	290	1.534
25— 49	64,649	2,325,233	2,088,833	.898	.810	.609	16.79	58.56	58.23	2.71	6.13	96.58	36	23	369	1.463
50— 74	37,477	2,289,912	1,806,179	.789	.804	.601	9.73	68.29	41.44	2.67	8.80	93.87	61	29	504	1.285
75— 99	22,974	1,983,156	1,586,043	.800	.803	.595	5.97	74.26	31.71	2.31	11.11	91.20	86	33	640	1.303
100— 149	26,890	3,267,398	2,551,883	.781	.797	.590	6.98	81.24	25.74	3.81	14.92	88.89	122	41	769	1.272
150— 199	14,955	2,588,090	1,792,393	.693	.780	.581	3.88	85.12	18.76	3.02	17.94	85.08	173	47	1,010	1.129
200— 299	16,785	4,102,468	2,770,322	.675	.758	.577	4.36	89.48	14.88	4.79	22.73	82.06	244	57	1,228	1.099
300— 399	9,385	3,248,349	2,085,825	.642	.741	.571	2.44	91.92	10.52	3.79	26.52	77.27	346	64	1,637	1.046
400— 499	5,714	2,551,052	1,671,971	.655	.733	.568	1.49	93.41	8.08	2.98	29.50	73.48	446	70	2,026	1.067
500— 999	12,141	8,510,456	5,195,488	.610	.702	.564	3.15	96.56	6.59	9.93	39.43	70.50	701	91	2,382	.993
1000— 1999	6,616	9,302,688	5,306,453	.570	.673	.556	1.72	98.28	3.44	10.86	50.29	60.57	1,406	114	3,927	.928
2000— 2999	2,409	5,840,487	3,409,644	.584	.663	.553	.63	98.91	1.72	6.82	57.11	49.71	2,424	129	6,456	.951
3000— 4999	1,898	7,287,443	3,912,959	.537	.646	.548	.49	99.40	1.09	8.50	65.61	42.89	3,840	147	8,775	.875
5000— 9999	1,381	9,352,621	5,095,534	.545	.632	.551	.36	99.76	.60	10.91	76.52	34.39	6,772	171	12,866	.888
10000—19999	578	7,896,475	4,558,751	.577	.626	.554	.15	99.91	.24	9.22	85.74	23.48	13,662	191	22,123	.940
20000—29999	178	4,333,991	2,457,202	.567	.623	.539	.05	99.96	.09	5.06	90.80	14.26	24,348	202	36,898	.923
30000 & Over	153	7,879,333	4,129,230	.524	.614	.524	.04	100%	.04	9.20	100%	9.20	51,499	223	51,499	.853
Total	385,006	85,690,563	52,588,227	.614	..	..	100%	..	..	100%	..	..	223	..	..	1.000
Five Size Groups																
Minimum Premium	95,833	1,830,630	1,132,123	.618	.618	.614	24.89	24.89	100%	2.14	2.14	100%	\$19	\$19	\$223	1.007
0— 399	258,105	20,905,387	15,718,872	.752	.741	.614	67.04	91.93	75.11	24.39	26.53	97.86	81	64	290	1.225
400— 999	17,855	11,061,508	6,867,459	.621	.702	.568	4.64	96.57	8.07	12.91	39.44	73.47	620	91	2,026	1.011
1000— 4999	10,923	22,430,618	12,629,056	.563	.646	.556	2.84	99.41	3.43	26.18	65.62	60.56	2,054	147	3,927	.917
5000 & Over	2,290	29,462,420	16,240,717	.551	.614	.551	.59	100%	.59	34.38	100%	34.38	12,866	223	12,866	.897
Total	385,006	85,690,563	52,588,227	.614	..	..	100%	..	..	100%	..	..	223	..	..	1.000

*Loss Ratio differentials are the loss ratios for the various size groups in the Individual Group column divided by the average loss ratio for all size groups combined.

TABLE 14
NEW YORK COMPENSATION EXPERIENCE BY SIZE OF RISK
Policy Years 1924 and 1925 Combined

Compiled by National Bureau 8/15/27

By Industry Groups

Premium Groups & Industry Groups	Stock Companies (27 Companies)					Mutual Companies (11 Companies)*					All Carriers				
	No. of Risks	Premium Earned	Losses Incurred	Loss Ratio	L. R. Diff.	No. of Risks	Premium Earned	Losses Incurred	Loss Ratio	L. R. Diff.	No. of Risks	Premium Earned	Losses Incurred	Loss Ratio	L. R. Diff.
Manufacturing															
Minimum Premium	14,481	235,892	134,450	.570	.922	152	2,663	720	.270	.528	14,633	238,555	135,170	.567	.976
0—399	57,822	4,465,561	3,418,526	.766	1.239	5,214	806,833	332,026	.547	1.070	63,036	5,072,394	3,750,552	.739	1.272
400—999	3,705	2,329,328	1,360,475	.584	.945	1,140	741,047	378,905	.511	1.000	4,845	3,070,375	1,739,380	.567	.976
1000—4999	2,446	5,089,522	2,798,739	.550	.890	1,394	3,174,492	1,632,553	.514	1.006	3,840	8,264,014	4,431,292	.536	.923
5000 & Over	493	6,245,697	3,629,213	.581	.940	432	4,899,394	2,469,676	.504	.986	925	11,145,091	6,098,889	.547	.941
Total	78,947	18,366,000	11,341,403	.618	1.000	8,332	9,424,429	4,813,880	.511	1.000	87,279	27,790,429	16,155,283	.581	1.000
Contracting															
Minimum Premium	12,635	413,536	360,641	.872	1.369	70	2,039	1,694	.831	1.818	12,705	415,575	362,335	.872	1.413
0—399	47,916	4,876,592	4,238,477	.869	1.364	1,155	158,208	80,354	.503	1.112	49,071	5,034,800	4,318,831	.858	1.391
400—999	4,416	2,677,685	1,724,102	.644	1.011	342	232,330	126,041	.543	1.183	4,758	2,910,018	1,850,143	.636	1.031
1000—4999	2,349	4,823,787	2,700,025	.560	.879	349	770,865	395,367	.513	1.123	2,698	5,594,652	3,085,392	.553	.896
5000 & Over	562	7,606,494	3,969,773	.522	.819	95	1,340,474	541,632	.404	.884	657	8,946,968	4,511,405	.504	.817
Total	67,878	20,398,097	12,993,018	.637	1.000	2,011	2,503,916	1,145,088	.457	1.000	69,889	22,902,013	14,138,106	.617	1.000
Commercial															
Minimum Premium	18,143	276,289	204,600	.741	1.231	135	3,764	466	.124	.232	18,278	280,053	205,066	.732	1.228
0—399	51,743	3,788,814	2,390,513	.631	1.048	1,848	236,204	137,901	.584	1.092	53,591	4,025,018	2,528,414	.628	1.054
400—999	2,163	1,307,374	696,843	.533	.885	345	213,287	129,014	.605	1.131	2,508	1,520,661	825,857	.543	.911
1000—4999	884	1,642,982	942,309	.574	.953	169	305,058	146,964	.482	.901	1,053	1,948,040	1,089,273	.559	.938
5000 & Over	118	1,448,430	864,065	.597	.992	14	124,949	58,638	.469	.877	132	1,573,379	922,703	.586	.983
Total	73,051	8,463,889	5,098,330	.602	1.000	2,511	883,262	472,983	.535	1.000	75,562	9,347,151	5,571,313	.596	1.000
All Other															
Minimum Premium	50,072	894,471	429,224	.480	.780	138	1,846	328	.178	.352	50,210	896,317	429,552	.479	.790
0—399	65,360	4,691,012	3,350,156	.714	1.161	1,692	139,893	77,409	.553	1.095	67,052	4,830,905	3,427,565	.710	1.172
400—999	3,216	1,973,804	1,248,631	.633	1.029	213	140,501	82,712	.589	1.166	3,429	2,114,305	1,331,343	.630	1.040
1000—4999	1,659	3,342,381	1,846,730	.553	.899	158	331,078	152,230	.460	.911	1,817	3,673,459	1,998,960	.544	.898
5000 & Over	322	4,685,120	2,655,085	.579	.941	34	766,357	384,697	.502	.994	356	5,351,477	3,039,782	.568	.937
Total	120,629	15,486,788	9,529,826	.615	1.000	2,235	1,379,675	697,376	.505	1.000	122,864	16,866,463	10,227,202	.608	1.000
All Industries															
Minimum Premium	95,331	1,820,188	1,128,915	.620	.998	495	10,312	3,208	.311	.620	95,826	1,830,500	1,132,123	.618	1.032
0—399	222,841	17,821,979	13,397,672	.752	1.211	9,909	1,141,138	627,690	.550	1.096	232,750	18,963,117	14,025,362	.740	1.235
400—999	13,500	8,288,194	5,030,051	.607	.977	2,040	1,327,165	716,672	.540	1.076	15,540	9,615,359	5,746,723	.598	.998
1000—4999	7,338	14,898,672	8,287,803	.556	.895	2,070	4,581,493	2,327,114	.508	1.012	9,408	19,480,165	10,614,917	.545	.910
5000 & Over	1,495	19,885,741	11,118,136	.559	.900	575	7,131,174	3,454,643	.484	.964	2,070	27,016,915	14,572,779	.539	.900
Total	340,505	62,714,774	38,962,577	.621	1.000	15,089	14,191,282	7,129,327	.502	1.000	355,594	76,906,056	46,091,904	.599	1.000

*The experience of Mutuals by industry groups is based on the first compilation made by the New York Board. The State Fund did not report the experience by industry groups.

TABLE 15
LOSS RATIOS BY SIZE OF RISK AND INDUSTRY GROUPS
New York State—Policy Years 1924 and 1925—All Companies Combined

Industry Groups	Size of Risk	No. of Risks	Earned Premium	Incurred Losses	Loss Ratios
Manufacturing.....	Under \$150	59,526	\$ 2,858,252	\$ 2,134,225	74.7%
	150—399	9,806	2,389,780	1,698,023	71.1
	Under 400	69,332	5,248,032	3,832,248	73.0
	400 and Over	9,737	23,102,044	12,454,865	53.9
	Total	79,069	28,350,076	16,287,113	57.4
Contracting.....	Under 150	49,132	2,762,986	2,705,846	97.9
	150—399	10,728	2,610,318	1,881,462	72.1
	Under 400	59,860	5,373,304	4,587,308	85.4
	400 and Over	8,080	17,497,465	9,545,853	54.6
	Total	67,940	22,870,769	14,133,161	61.8
All Other.....	Under 150	162,671	6,416,332	4,413,571	68.8
	150—399	16,202	3,833,317	2,284,501	59.6
	Under 400	178,873	10,249,649	6,698,072	65.3
	400 and Over	9,267	17,386,459	9,873,029	56.8
	Total	188,140	27,636,108	16,571,101	60.0
Total.....	Under 150	271,329	12,037,570	9,253,642	76.9
	150—399	36,736	8,833,415	5,863,986	66.4
	Under 400	308,065	20,870,985	15,117,628	72.4
	400 and Over	27,084	57,985,968	31,873,747	55.0
	Total	335,149	78,856,953	46,991,375	59.6

TABLE 16
LOSS CONSTANTS NECESSARY TO EQUALIZE LOSS RATIOS UNDER AND OVER \$400
 Based on New York State Experience for Policy Year 1924 and 1925 by Size of Risk and Industry
 All Companies Combined—Premium Shown in Thousands Only

Size Group	Premiums			(4) L. R.	Manual Premiums			(8) Add'l Premium from M. P. of 15 x R	(9) Premium to be derived from fees (6)-(7)-(8)	(10) Realized Premium †	(11) Realized L. R.	(12) Amt. of	(13) Change in Man. Rates (7e) + (3e)
	(1) Actual	(2) 1924-5 Manual Level *	(3) Future Manual Level †		(5) Adj. so L. R. over 400 equals Total Col. (4)	(6) Under 400 adj. so L. R. equals Total Col. (4)	(7) Adj. for Expected Off- balance						
Manufacturing					(3) x .936	(5) x 1.386	(5) x 1.021	Manufacturing	(7d) x .979				
(a) 0—149	2,858	x x	2,968	71.9	2,778	3,851	2,837	(a) 174	840	4,458	47.9	24.32	
(b) 150—399	2,390	x x	2,476	68.6	2,318	3,212	2,366	(b) x x	846	2,605	65.2	24.32	
(c) 0—399	5,248	x x	5,444	70.4	5,096	7,063	5,203	(c) 174	1,686	7,003	54.3	24.32	
(d) 400 & Over	23,102	23,739	24,524	50.8	22,954	x x	23,436	(d) x x	x x	22,944	54.3	x x	
(e) Total.....	28,350	28,987	29,968	54.3	28,050	x x	28,639	(e) x x	x x	30,007	54.3	x x	.956
Contracting					(3) x .867	(5) x 1.697	(5) x 1.051	Contracting	(7d) x .952				
(a) 0—149	2,763	x x	2,930	92.4	2,540	4,310	2,669	(a) 561	1,080	5,387	50.2	43.90	
(b) 150—399	2,610	x x	2,763	68.1	2,396	4,066	2,518	(b) x x	1,548	2,989	62.9	43.90	
(c) 0—399	5,373	x x	5,693	80.6	4,936	8,376	5,187	(c) 561	2,628	8,376	54.8	43.90	
(d) 400 & Over	17,498	19,085	20,078	47.5	17,407	x x	18,295	(d) x x	x x	17,417	54.8	x x	
(e) Total.....	22,871	24,458	25,771	54.8	22,343	x x	23,482	(e) x x	x x	25,793	54.8	x x	.911
All Other.....					(3) x .922	(5) x 1.237	(5) x 1.079	All Other	(7d) x .927				
(a) 0—149	6,417	x x	6,977	63.2	6,433	7,957	6,941	(a) 908	103	8,498	51.9	3.99	
(b) 150—399	3,833	x x	4,161	54.9	3,836	4,746	4,140	(b) x x	606	4,204	54.3	3.99	
(c) 0—399	10,250	x x	11,138	60.1	10,269	12,703	11,081	(c) 908	714	12,702	52.7	3.99	
(d) 400 & Over	17,386	18,761	20,329	48.6	18,743	x x	20,224	(d) x x	x x	18,748	52.7	x x	
(e) Total.....	27,636	29,011	31,467	52.7	29,012	x x	31,305	(e) x x	x x	31,450	52.7	x x	.995
Total								Total					
(a) 0—149	12,038	x x	12,875	71.9	11,751	16,118	12,447	(a) 1,643	2,028	18,343	50.4	16.32	
(b) 150—399	8,833	x x	9,400	62.4	8,550	12,024	9,204	(b) x x	3,000	9,798	59.8	16.32	
(c) 0—399	20,871	x x	22,275	67.9	20,301	28,142	21,471	(c) 1,643	5,028	28,141	53.7	16.32	
(d) 400 & Over	57,986	61,584	64,931	49.1	59,104	x x	61,955	(d) x x	x x	59,109	53.9	x x	
(e) Total.....	78,857	82,455	87,206	53.9	79,405	x x	83,426	(e) x x	x x	87,250	53.9	x x	.957

Note: All premiums are shown in Thousands of Dollars.

	1924	1925
*Factors: (Divisors)		
Mfg.....	.969	.976
Cont.....	.925	.912

	1924	1925
†Factors: (Multipliers)		
Mfg.....	1.079	1.002
Cont.....	1.128	1.007
A. O.....	1.142	1.044

†(7a) + (8) + (12) × No. of Risks.
 (7b) + (12) × No. of Risks.
 (7d) × Off-balance.

INTEREST EARNINGS AS A FACTOR IN CASUALTY
INSURANCE RATE MAKING

BY

B. D. FLYNN

It is generally known that interest earnings are an important factor in the making of rates for life insurance. The contract ordinarily runs for a long term of years and interest earnings during the life of the policy must necessarily be taken into consideration in building the rates. Also, if a death claim is to be disbursed in instalments over a term of years, interest is used in computing the value of the claim. Casualty insurance contracts, on the other hand, are ordinarily written on the one year term plan and claims are generally liquidated within a short time after they are incurred. The factor of interest earnings in casualty insurance, therefore, has been looked upon as of minor importance and has not been injected, to any extent, into rate making procedure. The underwriter has appreciated that this has produced a margin of safety—and the general feeling of all interested has been that this was a good practical treatment of the matter.

Of late, however, this question of the importance of interest earnings as a factor in the making of casualty insurance rates has come to the fore as a subject of discussion by underwriters and supervising officials. There has been a noticeable tendency to magnify the importance of the factor. The question has been raised as to what part of the financial earnings of a casualty company should be considered in the making of rates. Throughout the discussions there has been a considerable amount of vagueness and confusion—possibly due to wrong approach of the problem. It is hoped that the following comments will bring about a useful and clarifying discussion.

Let us first dispose of the question as to what part of the financial earnings of a company should be considered in making rates. It has been claimed by some that a share of investment earnings rather than interest earnings should be credited to policyholders. Investment earnings of a company in a particular year are made

up of (a) interest earnings—including dividends and rents—and (b) gain or loss from sale of securities during the year. Appreciation or depreciation in security holdings is, of course, no part of investment earnings unless the appreciation or depreciation is realized by sale of securities. The only part of investment earnings which can be considered as a possible credit to the policyholder is interest earnings. The stockholders run the risk incident to appreciation or depreciation of securities and therefore any gain or loss from sale should go to their account. If stockholders of an insurance company guarantee a certain rate of interest to the policyholder on his premium, the surplus of the company must stand the strain of fluctuation in value of securities or loss through sale—just as in the case of a savings bank which guarantees a certain rate of interest on deposits.

Coming back to the question involved in the subject of this paper—the general problem has usually been attacked by endeavoring to show what part of the total interest earnings of the company should be credited to policyholders in making their rates. In most discussions, interest earnings on reserves have been considered as belonging to the policyholders—and it has even been implied that interest earnings on the company's capital and surplus should be taken into consideration. That this is a confusing and debatable view-point from which to study the problem can, I believe, be shown briefly.

The unearned premium reserve carried by a casualty company in its annual statement is made up partly from the premiums paid by the policyholders and partly from the surplus of the company. A large part of the management expense such as commissions, cost of inspections, policy writing, etc., has been spent for the unearned portion of the premiums in force at date of statement but the full unearned portion of the gross premium must be reserved by law. The interest earned by the company on that part of the unearned premium reserve which is borrowed from surplus and which constitutes the "equity" in the reserve belongs to the stockholder and not to the policyholder. Further, the annual statement of a casualty company is upon a "written" basis. It is clear, therefore, that, as interest can only be earned upon premiums after they have been paid, the part of the total reserves of the company in its annual statement based upon outstanding premiums, either unearned premium reserves or claim

reserves, can not be credited to the policyholder and reflected in his rates.

It is hardly necessary to argue that interest earnings on the capital and surplus, funds which have either been paid in by stockholders or earned in past years of operation of the company, belong to the stockholders and not to policyholders and should not properly be taken into consideration in the making of rates.

A much clearer way of looking at the problem than this effort to apportion to policyholders their share of the total interest earnings of a company is to consider the situation of the average individual policyholder and to credit him with interest on his premium at a guaranteed rate, from the time it is received until it is disbursed by the company in the form of management expense or claims. This, as a matter of fact, is the way the factor of interest is utilized in non-participating (stock) life insurance rate making. In the calculation of a life one year term rate, interest is credited to the average policyholder upon his premium until date of payment of claim. If claim is paid in instalments, interest is allowed upon the unpaid part until total claim is liquidated. Certain theoretical assumptions are necessary in life rate making procedure which are not referred to here and which have no bearing upon the general point made.

Let us work out the problem from this standpoint in a comparatively simple form of insurance—automobile collision. If a study were made of 10,000 policies of this form, it might develop that the premiums on some policies were paid on the effective date of the coverage; the premiums on others paid within 45 or 60 days and on some policies the dates of premium collection extended to a material length of time after the insurance became effective. Let us assume that on the average premiums were collected 60 days after the policies were written. Parts of the premiums for these policies would be disbursed for certain management expenses such as policy writing, inspection, etc. on or about the date of issuance of the contracts. Other expenses such as commissions would be met as premiums were paid. Still later, taxes, claim expenses and the balance of administration expenses would be met.

As a usual practice under this form of contract claims are paid soon after they are incurred. It is reasonable to assume that claims would occur on the average approximately six months

after the issuance of the contract. In order to arrive at a rough estimate of the interest earnings on this line we may assume that premiums were collected two months after the contracts were written and that the average period which elapsed before the total of premiums was disbursed for either expenses or claims was six months from the date the contract became effective. The average period, therefore, during which the carrier was in possession of premiums would be four months and interest would be earned on these premiums at a guaranteed rate of interest for one-third of a year. If the guaranteed rate were, let us say, $3\frac{1}{2}\%$, the interest on each \$100 of premium would be $\$1.16\frac{2}{3}$ or $1\frac{1}{6}\%$.

Let us consider the problem in another line of casualty insurance which can not be handled so simply—workmen's compensation. Here premiums are collected partly in the form of advance payments due at issuance of policies and partly as premium adjustments made as a result of payroll audit due at the end of the policy term. It is clear that in this line a longer delay will be experienced in the collection of total premiums. Further, claim payments are, on the average, extended over a long period of time after claims are incurred. By studying the experience of a large number of policies, however, the average delay in receipt of premiums can be determined and also the time which will elapse before the premiums are disbursed as management expense and claims. The problem is somewhat more complicated than in the case of automobile collision, but the interest to be credited to the average policyholder at the rate guaranteed by the company for the period that the premium was held by the company can be figured without much difficulty and the result expressed as a percentage of premium.

In this connection it may be well to call attention to the fact that under present conditions interest earnings are reflected, to a certain extent, in the making of New York compensation rates. Permanent total disability claims, fatal cases with dependents, and certain permanent partial non-dismemberment claims in New York State are reported in Schedule Z at an incurred cost which reflects the amount of actual payments to the date of valuation plus the reserve for future payments which is discounted for mortality and interest. The greater portion of payments on this type of claim, therefore, enters Schedule Z experience at an amount already discounted for interest. Since the final

Schedule Z report provides the basis for compensation rate making, it is evident that in New York State at least the pure premiums underlying compensation rates are, to a certain extent, discounted for interest.

The question might be raised at this point as to the advisability of discounting *all* claim payments particularly in workmen's compensation, to some date, such as the middle of the policy year, so that rates might be based on what might be called discounted pure premiums. This would follow more closely life insurance practice—but the two problems are quite dissimilar. A brief consideration of this suggestion will show its impracticability and the unwarranted complication of the statistical mechanics if anything of this kind were attempted in casualty insurance. The most sensible and practical solution of the problem appears to be to treat the value of the interest factor in the various lines of casualty insurance rate making as a separate problem and not to introduce it into the rate making procedure, which is now sufficiently complicated.

What rate of interest could a casualty insurance company guarantee upon premiums during the period they are held awaiting disbursement? Part of the premiums in some lines are not disbursed for long periods of time—five or ten years in liability insurance—fifteen, thirty or forty-five years in a line such as workmen's compensation in New York State. The rate of interest guaranteed for such terms in the future must be established at a conservative figure. It should be borne in mind that it is necessary for a company to hold large funds on deposit for payment of claims on short notice, upon which only about 2% interest is earned. The average rate of interest earned upon mean invested funds by the ten casualty companies writing the largest volume of business for the three-year period 1925-1927 was about 4%. Looking at the matter from all angles, 3½%—which is the rate established in New York State for the commutation of workmen's compensation claims and which, also, is the usual maximum rate specified by statute for valuing the policy reserves under life insurance contracts—appears to be the maximum rate of interest which a casualty insurance company could guarantee.

Utilizing a large volume of experience, interest earnings ex-

pressed as a percentage of premiums have been worked out for various casualty lines at a guaranteed rate of $3\frac{1}{2}\%$ as follows:

Automobile Liability.....	2.8%
Automobile Property Damage...	1.4
Automobile Collision.....	1.0
Liability other than Auto.....	2.4
Workmen's Compensation.....	2.1
Plate Glass.....	.8
Burglary.....	.9
Steam Boiler and Machinery.....	.8

As stated before, casualty underwriters have always thought of interest earning in casualty insurance as producing a small margin of safety in the premiums. The solution of the problem offered above will permit the underwriter to continue to view the matter from this angle. Interest earnings in the various lines expressed as a percentage of premium are shown to be comparatively small. Why is it not proper to continue to view the matter of interest earnings in casualty insurance rate making in this manner—as a small but necessary margin of safety in the rates?

ORIGIN, DEVELOPMENT AND PRACTICES OF LIVESTOCK INSURANCE

BY

EDWIN W. KOPF

The purpose of this paper is to present a brief review of the development of livestock insurance, one of the casualty lines which has not heretofore received much attention in the *Proceedings* of this Society. In a number of our states, without specific statutory provision for livestock insurance, this branch of the business is classed as casualty or "miscellaneous" insurance. The subject seems, therefore, to come within the scope of matters which may be brought before this Society.

SCOPE OF LIVESTOCK INSURANCE

The importance of livestock insurance is suggested by the fact that the value of all animals on farms in the United States was estimated in 1927 to be more than \$5,000,000,000. The number and value of farm animals in the United States as determined by the Census of Agriculture on January 1, 1925 was as follows:

TABLE 1
NUMBER AND VALUE OF ANIMALS ON FARMS IN THE
UNITED STATES JANUARY 1, 1925

Kind	Number	Value	Per cent. of total value
All domestic animals.....	..*..	\$4,450,216,000*	100.0
All cattle.....	60,760,000	2,019,489,000	45.4
Dairy cows and heifers...	17,645,000	912,532,000	20.5
Horses and mules.....	22,082,000	1,451,041,000	32.6
Horses.....	16,401,000	1,001,521,000	22.5
Mules.....	5,681,000	449,520,000	10.1
Sheep.....	35,590,000	354,485,000	8.0
Goats.....	3,370,000	10,250,000	.2
Swine.....	50,854,000	614,951,000	13.8

*Exclusive of asses and burros, not enumerated.

It is, of course, idle to hope for anything like adequate coverage on the animal values at risk in agriculture. A beginning in such insurance has been made, however, in various countries of the world. Corporate enterprise in livestock insurance dates from the first third of the last century; livestock coverage of some kind on the mutual association or club plan reaches back to the mists of antiquity. Further progress in this field may result from

studies which should be made into the operations of the various kinds of institutions providing indemnity for cattle owners in times past. Retrospects of loss experience would be of exceptional value in this regard.

The recent, steady high price for cattle may persist and give rise to another wave of incorporations of livestock insurance companies such as we had in this country after 1910. Some regard for the lessons of livestock insurance history may prevent, however, another crop of liquidations of the type and with the same underlying causes which followed the 1920-1921 slump in farm prices. We may profit first from an examination of certain definitions and descriptive data relating to this form of insurance.

1. DEFINITIONS

Lehman's Definition.

Perhaps the most suitable definition for our purpose is that of John Lehman: "Livestock insurance is a contract by which the insurer agrees to indemnify the insured against such loss or damage as he may sustain by reason of injury to, or the death of, livestock by the happening of the perils specified, . . . ; or a contract to pay a certain sum of money on the death of an animal from disease or accident."

Luck's Definition.

A somewhat broader definition has been given by George Luck in his treatise on "Animal Insurance in South Germany." The insurance of animals is there defined to be "any particular economic arrangement which assumes the risk of loss of value, or which reduces to a minimum the burden of damage or loss, suffered by an owner through the sickness, accident, or death of an animal." This broad definition would include the work of governments in combating communicable diseases among animals. In fact, the future of animal insurance may be said to depend in part upon the measures taken by nations and states in preventing the spread of such diseases. Luck's definition would also cover government compensation for loss arising from such diseases, for destruction of an animal following tuberculin testing, or indemnity as a result of slaughtering to prevent the spread of disease. It includes, of course, the assumption of general and special animal risks by insurance institutions.

While livestock insurance is chiefly life insurance for animals, in some parts of the world it is also understood to include disability, or loss of use of the animals' services; marine, military manoeuvre, exhibition or show, and railway transport hazards; loss by theft; loss through rejection of the whole or part of an animal when slaughtered for food or for industrial purposes; loss from separate diseases such as trichinosis, "grass disease" and anthrax; the special hazards in foaling, castration, vaccination and surgical operation; veterinary service; and owner's liability for any damage caused by an animal or by any vehicle drawn by animal power. It may cover specifically loss from fire, wind-storm, tornado and/or lightning. Livestock insurance may also extend a guarantee of an animal's functioning in accordance with terms outlined in a contract of sale. In the United States fire insurance on animals in stockyards is available.

1849 Decision in Court of Exchequer, England.

According to a curious decision given in 1849, in the Court of Exchequer, England, in the case of Attorney General *vs.* Cleobury, it was decided that a contract of insurance on the lives of cattle was an insurance on lives within the meaning of 55 George III, c 184; and that, therefore policies on the lives of cattle were subject to the same stamp tax as was required on a policy of life insurance on human beings.

Definitions in State Laws.

Section 70 of the New York Insurance Law defines livestock insurance as a contract of insurance upon the lives of horses, cattle and other livestock, or against loss by theft of any such property, or both. In some of our States the provision of veterinary service is included in the statutory definition of livestock insurance.

Livestock Insurance not Peculiar.

A contract of insurance on livestock does not differ in any essential respect from other contracts of indemnity against damage to property from like perils, as where ordinary fire, lightning or tornado insurance policies cover livestock along with other property definitely located. Provisions in policies covering loss through the death of animals, or through accident or disease in such animals, are peculiar only insofar as required by the nature and use of the property insured.

2. ANIMALS INSURED

The animals covered by the various plans for livestock insurance, listed in decreasing order of the approximate world volume of coverage, are: horses, mares, colts, fillies and foals; bulls, cows and heifers; swine; sheep; goats; dogs; rarely, wild animals; feathered creatures; sometimes bees and the *cimex lectularius*. Further classifications for insurance purposes are made within most of these groups. Risk classes or grades are established according to the work required of an animal or according to the conditions under which it lives. Pure-bred or registered stock is distinguished in practice from the commoner run of animals. Race horses are subject to special treatment. Among the rarer forms of animal coverage are life insurance on wild animals while in transit from the tropics to their destinations in zoological gardens; and short-term covers for circus and exhibition animals, such as monkeys and chimpanzees. It is said that in Lausanne, Switzerland, insurance has been available to hotel-keepers against damage arising from infestation of the premises by that troublesome insect, the common bedbug. Switzerland also has coverage on bees.

3. TYPES OF CARRIERS

Animal insurance may receive its primary impetus in three ways: (1) through statute law, or edict, compelling insurance, (a) with choice of carrier (facultative—compulsory); or (b) without choice of carrier as between government and private insurance institutions; (2) through conditional or modified State insurance set up by statute or edict, where the animal owner is not compelled to insure his animals, but where he or his local club or society may secure coverage from a State-operated institution and (3) wholly voluntary insurance where the animal owner is free to insure or not, and to place his coverage wherever he pleases.

Failure of Compulsory Animal Insurance.

Compulsory animal insurance has been subject to inquiry and experiment under Frederick the Great in Germany, in Belgium and in Switzerland. The idea never took root and the unpopular compulsory plan never produced results any better than those achieved by the voluntary forms of animal insurance. There is no particular appeal in compulsory animal insurance by statute or

edict, except perhaps a theoretical breadth of coverage which never appeared in practice anywhere. Conditional State insurance has been popular in certain countries where it was entirely free of bureaucratic elements and where subventions were made or expert guidance, excess or reinsurance was provided.

Animal insurance has been offered by the following types of carriers: (1) local mutual benefit societies or clubs,—institutions of great antiquity and of marked effectiveness; and (2) stock or mutual insurance companies confined to this line, which date from the early part of the nineteenth century; (3) property insurance companies including livestock with other insured objects, or offering separate contracts for animal life insurance or special animal covers.

4. LOCAL CATTLE CLUBS OR SOCIETIES

A local society or club consists of a group of animal owners who have agreed to share the management expense of insurance and losses arising from the death of animals owned by members of the club or society. These societies provide "all risk" life insurance, and sometimes separate indemnity for loss through rejection of part or the whole of a carcass rejected as unfit for human consumption. This is "slaughter insurance." In some countries, these cattle clubs or societies have free choice of registering or of not registering with a central supervisory authority. The cattle club or society may also be incorporated or not incorporated. Chiefly, they are unregistered and unincorporated, without written constitutions, by-laws or rules. Generally, they cover a narrow area, perhaps one or two parishes, townships or districts, and usually provide cover for risks on one type of animal only: horses, common cattle, hogs, sheep, goats, registered animals, etc. The goat clubs are important in those countries where the goat is the poor man's "cow." Some of the societies are of the mixed type, where two or more kinds of animals are insured. In some countries as will be seen later, State subsidies, State reinsurance and excess insurance facilities are provided for these cattle clubs. In some cases, State aid is limited to expert advice and supervision, or to supervision as to solvency only.

These local clubs afford protection to the small cattle owner, precisely the man who needs protection most. The loss of a milch cow, of a single horse, or of a goat or two, is a serious matter

to an owner dependent for a living on a small group of animals. Furthermore, the insurance companies, at least in Europe, regard the small owner as an undesirable moral risk and a source of more expense than they care to carry. Their loss experience varies inversely with the number of animals per owner. The local cattle club, with its capacity for close scrutiny of prospective members and of risks offered, fills a need among small owners which cannot be met at reasonable cost by the stock or large mutual companies.

Local Clubs the Prevailing Facility for the Small Owner in Germany.

The general experience, in Germany at least, is that the more humble variety of cattle insurance can be most suitably carried by local organizations having moral disciplinary powers or potentialities. The more important agricultural boards and councils in Germany have been unanimous in recommending this form of organization to combat the grave risk of moral hazard, in cases where adequate membership of the society and breadth of territory can be secured. State subsidies, the provision of expert supervision and administrative advice, the setting up of reinsurance and excess insurance pools under Chambers of Agriculture and under Governments have resulted from the conviction that the small owner in rural territory needs protection practically at loss cost and that the regularly incorporated commercial companies do not want this class of business.

As regards the legal position of such clubs or societies in England, the club can either be constituted without formalities, or it can be registered under the Friendly Societies Act of 1896. Registration costs nothing and carries with it many advantages: defaulting officers can be proceeded against, and the necessity for keeping accounts on the Registrar's form is an excellent safeguard against slackness in the conduct of the Society's affairs.

Practical Operation of a Local Horse, Cattle or Pig Club.

Some idea of the practical working of a local animal insurance club may be obtained from a review of the practices employed by the Press Cottagers' Cow Club of England. This club was formed in 1838, and in 1911 it still had 179 members, insuring 453 cows and 84 calves. For the ten years prior to 1911, the death rate of cows insured in this club averaged 2.1 per cent. per annum.

Until 1910, it paid all its losses at a market value not exceeding £10 for any insured cow dying from disease or accident. After 1910, the maximum amount payable was raised to £12.

The members were almost entirely small property holders or cottagers. The affairs of the club were managed by a committee of seven members elected annually and by a secretary, treasurer and four stewards or "markers". The local schoolmaster was the secretary, and received a small salary. The only other charges paid by the Society, besides printing, stationery, etc., were 1s. paid to the "ordinary" or reviewing committee on the death of an insured animal; 1s. 6d. paid to an "advisory" committee assembled to value a sick animal, and 1s. 9d. paid to the ordinary committee when especially summoned. The total expense of management of this club averaged about 3d. per animal insured per year.

Each steward had an area assigned to him within which he "marked" any animal proposed for insurance by the club member in accordance with the rules. The steward satisfied himself that the animal was sound and healthy. Then he branded it on the hoof or horn with the Society's brand and entered a description of the animal, with the name of the owner, in his book. When an insured animal fell ill, or met with an accident, the steward was sent for to value it and to see that everything was done to cure the animal. He generally called in an ex-steward or member to assist him in this duty. He received from the owner 3d. for each animal marked and from the club 1s. for attendance at each quarterly meeting. There was at that time no difficulty in getting good experienced men to accept the responsible office of steward and the valuations were rarely disputed either by the owner or by the Society.

The owner paid an insurance contribution of 1s. per quarter year for each cow and 9d. per quarter for each calf insured. Members formerly had to pay an entrance fee of 1s. for each cow and 6d. for each calf and an annual subscription of 2d. per animal towards management expenses, so that the total payments per cow, after payment of the entrance fee, amounted to 4s. 2d. The owner was liable to a levy per animal, in event that it became necessary to raise funds to pay for exceptional losses. But no such levy has had to be made for many years. The club had a reserve fund of £1,040 when these facts were gathered, and it

seemed at that time very improbable that any levy would ever become necessary. The hide and carcass of deceased animals belonged to the Society which had contracts for the sale of all carcasses at 15s. each. No compensation was paid for death of an animal through the negligence of the owner. Insurance was confined practically to milking cows and calves, and fattening animals. Young stock was not insured except in rare instances.

In 1925, there were 60 such co-operative cattle insurance clubs or societies reporting to the Registrar of Friendly Societies in Great Britain, and several hundred other clubs and societies not registered. The Ministry of Agriculture and Fisheries of Great Britain, in its leaflet No. 221, describes the procedure necessary in England, at the present time, for the organization and the registration of these local mutual cattle or pig clubs. The Ministry has much confidence in the ability of these clubs to scrutinize new members, to inspect cattle offered for insurance and to settle losses equitably.

In Germany, the number of mutual cattle insurance societies or clubs is very great (about 6,000 recently). They cover one or several communes or political districts, have in general no written articles of association and possess the indispensable facility for choosing their members in the first place, for controlling the admission of animals to insurance, for supervising claim adjustments and in other ways reducing moral hazard. Further facts on these insurance institutions in Germany will be given later on.

5. STOCK OR MUTUAL LIVESTOCK INSURANCE COMPANIES

Where the coverage is offered by stock or mutual insurance companies writing animal insurance only, the scope of operations generally covers a whole State or nation on various types of animals for general and specific risks,—“all life risks” as to life insurance, slaughter insurance, operation, vaccination, castration, foaling, anthrax, trichinosis, transport and liability insurance. Some of the companies confine their operations to insurance on one kind of animal, say horse insurance. The majority of the stock and mutual companies are of the mixed type as to animals covered and kinds of risks accepted. The mixed type is characteristic also of the fire and casualty companies writing livestock direct and reinsurance lines. From the record of livestock insurance by mutual or stock companies, it is impossible to say

whether the one or the other is the more desirable from the insured's point of view. Profits paid to shareholders of stock companies in this line will never lie heavily on the conscience of the insurance business. In general, there have been no underwriting profits to divide.

6. PRINCIPLES AND PRACTICES OF STOCK AND MUTUAL LIVESTOCK INSURANCE COMPANIES, INCLUDING FIRE AND MULTIPLE-LINE CASUALTY COMPANIES WRITING LIVESTOCK INSURANCE

A brief description of the more important elements of practice in commercial livestock insurance is shown below:

(a) *The Policy.*

The contract is a contract of indemnity,* In 1917, the Subcommittee on Uniform Policy Forms for Livestock Insurance, of the National Convention of Insurance Commissioners, presented a form of livestock insurance policy which was adopted by the Convention. The ensuing comment on the contract will follow, in general, the outlines of the policy drafted by the Convention's Committee. The contingency insured against under this uniform policy form is "loss by death caused by sickness or accident, except as herein provided, to the amount set opposite the name of each animal described hereinafter." The schedule describing the objects insured provides for the statement of the name or other identifying mark of the animal, the animal's age, color, sex, the amount of insurance on the animal and the premium. In policies issued abroad, it is customary also to stipulate the risk class under which the insurance on the animal is written and the estimated value of the animal.

The particulars in respect to extent of coverage in the policies of some of the companies, the insuring clauses and the statement of the conditions, stipulations, limitations and warranties are very carefully and clearly drawn. There can be no doubt in the mind of the average intelligent stockowner as to what the livestock policy means. The services to be performed by the insurer for the insured are clearly set forth in all of the policy forms of the companies transacting livestock insurance business in this country and abroad.

*Life, accident and sickness insurance contracts for human beings are contracts of investment.

Obligations of the Insured.

The initial obligations of the insured are to pay the premium according to the grade of the risk at the times and in the manner specified, and in certain countries, to pay also an entrance fee to cover the initial cost of investigation and policy issue. This membership fee is not paid on renewal of the policy. The insured is under obligation also to present for insurance only healthy animals; to act in good faith toward the insurer, that is, not to conceal or misrepresent any material fact or circumstance concerning the insurance or the subject thereof; and not to procure any other insurance on the same animals, either valid or not. He is required to be unconditionally and solely the owner of the animals; immediately to employ a licensed veterinarian to attend any sick or injured animal; not to use the animal for any other purpose than that stipulated in the application; to state truthfully the purchase price of the animal, and above all, to give immediate notice by telegraph or otherwise to the company in event of sickness, injury or death of any animal covered by the policy. The insured, furthermore, is required to hold the carcass of the dead animal for inspection if requested by the company to do so, and proof of loss, signed and sworn to on a blank furnished by the company, must be made within thirty days*. False swearing or concealment of any material fact or circumstance in such proof of loss by the insured shall forfeit all claims under the policy. The livestock policy does not generally cover the following contingencies: loss by death from disease contracted, or from injury which occurred, prior to the delivery of the animal to the insured; loss through war, riot, civil commotion, by invasion rebellion, insurrection, military or usurped power; loss by death, if during the term of the insurance the animal shall have been bred or castrated, or shall have foaled; sometimes, loss by flood or earthquake; loss by death caused by the intentional act or by the negligence of the animal's owner, or slaughter without the consent of the insurer; if the owner violates Governmental regulations as to epidemic disease; or if the animal is injured in a betting race.

Modes of Premium Payment.

Payment of the premium may be made in two ways. The premium may be either fixed or variable for a given risk class,

*Period varies in some countries.

and if variable, may be of the "advance" type with adjustment at the end of the policy year, or of the "assessment" type, payable at the end of the policy year. Assessment calls are sometimes made by mutual companies or societies at various times during the policy year. Newspaper subscription or "premium" insurance on animals has been tried without success in Germany.

The fixed premium type of policy is least in vogue in mutual animal insurance abroad, because of the wide fluctuations in loss experience. The fixed premium type existed in modified form in two Dresden cattle insurance institutions. Under this plan an advance premium for a full year's coverage was collected and was then apportioned to each of the months of coverage. Management costs in the month were deducted and the residual income divided proportionately among the losses which occurred in the month.

Period of the Insurance.

The period of the insurance is, in general, one year, although for certain special contracts much shorter periods are covered. A renewal of the livestock policy means in general a new inspection, and a new application. In Germany, the insured has a two weeks' grace period in which to pay the renewal premium. There is the single-trip policy in cattle and hog transport insurance; the one-to six-months policy in hog insurance; the special contract which covers the risks during foaling, castration, vaccination and surgical operation, as well as the short-period covers of exhibition and show policies in force while animals are on circuit at state or county fairs. Short-term transport contracts have been much abused, especially in hog insurance. Insurance is bought on hogs in transit during the summer season when the risk of smothering is greatest and is omitted in the colder season of the year when this particular cause of loss is at a minimum.

Importance of Notice of Loss.

Perhaps one of the most important obligations upon the insured is that he shall give the insurer immediate notice in case of sickness or injury of the animal insured. This obligation of the insured is stressed in livestock practice, the world over. Failure to comply with this requirement generally defeats the policy. In the case of *Illinois Livestock Company vs. Kirkpatrick* (61 Ill., App. 74), it was held that a condition requiring the insured to give

the insurer notice at once in case of the sickness of, or an accident to, an insured horse, was reasonable and was inserted for the protection of the insurer. An agreement of this kind is held to be a promissory warranty and strictly to be fulfilled (*Johnston vs. Northwestern Livestock Insurance Company*, 107 Wis. 337; 83 N. W. 641). In the case of *Alston vs. Northwestern Livestock Insurance Company*, 7 Kan., App. 179, it was held that notice by telegram was material, and failure to give such notice voided the policy. Prompt notification of infectious disease is an organic part of every Act for the control of epizootics the world over.

Transfer or Sale of Insured Animals.

The contract may be transferred on the exchange or sale of stock upon application for transfer duly completed, signed, and approved by the head office of the company. Policies may be assigned to a bona fide purchaser, provided the premium has been paid and the consent of the company endorsed on the policy. Some companies require a new policy on sale or transfer of the insured objects. Livestock companies, in general, reserve the right to cancel the insurance in case the new stock is not acceptable under its rules.

(b) *Moral Hazard.*

Discussion of this subject occupies most of the space in the literature on livestock insurance. The moral hazard in livestock insurance is excessive as compared with other branches of the business, and arises from the fact that there are so many simple ways in which an animal may be permitted to die without deliberately killing it. An animal owner with an elastic conscience may kill his animal by overfeeding, overwatering or by improper feeding. In the insurance of stallions and breeding bulls, the hazard is especially great. A stallion may be worth a thousand dollars one day and perhaps in ten or twenty days may have become so reduced in value as to be worth no more than an ordinary plug. The same observation applies to fine breeding bulls and to race horses.

Overvaluation of animals, and insurance for more than three-quarters of a conservative value on the animal, are also important factors in encouraging an unwholesome loss ratio. Specific cover on livestock against lightning or tornado loss has been abused. A case of clover bloat has been known to be passed off as the result of a lightning stroke.

One of the important primary causes of wholesale liquidations of livestock insurance companies is the excessive rise at times in the price of livestock and the ensuing depreciation in values which are characteristic of the livestock industry. In the early 90's of the last century and during 1921 and 1922, the prices of livestock dropped precipitately. Prosperity in the livestock business in the United States has been erratic and ill-established whenever it has occurred. When prices drop after a period of extremely high valuations, a variety of strange mishaps to livestock, and to livestock insurance companies, occurs as soon as market valuations go below insurance valuations. When livestock prices are high, farmers may be readily induced to insure their animals, but when prices fall, farmers generally withdraw their insurance coverage. Since 1920, twenty-four livestock insurance companies in this country have liquidated or have been reinsured in other organizations.

(c) *Subrogation.*

In general, livestock insurance carriers may require from the insured an assignment of all right of recovery under the policy against any party for loss to the extent that payment therefor is made by the insurer.

7. FARMERS' FIRE, LIGHTNING AND WINDSTORM MUTUALS AS LIVESTOCK CARRIERS. UNITED STATES

In the United States and abroad, incorporated mutual societies and associations limited in territory to certain counties, townships or districts, insure property, including livestock, on farms and in villages against loss through fire, lightning or windstorms. According to Dr. Victor N. Valgren, a few of the local farmers' property insurance mutuals in the United States handle risks only on buildings, their contents and farm machinery, while the insurance of livestock against fire, lightning and windstorm is carried in a separate and distinct organization. Livestock insurance conducted by such localized mutual companies or associations sometimes includes loss by death or accident from any cause and involves hazard and administrative problems not present to the same extent in insurance of other property. In most parts of the United States, lightning is one of the most frequent causes of loss of livestock, and from the point of view of this one hazard, each animal is to a considerable extent, a separate and distinct risk.

The following text is quoted from Dr. Valgren's work:

"In the United States, there are three plans for handling livestock insurance by local fire mutuals. The first of these may be designated as the 'blanket plan;' the second, the 'specific insurance' plan; and the third, the 'prorating or distribution plan'.

*The 'Blanket' Plan.**

"Under the 'blanket plan,' a fixed sum of insurance is placed on each class of animals, as for instance, a given sum on horses and a different sum on the cattle owned by the insured. These sums may, in some cases, represent the usual maximum coverage of three-quarters of the total value, while in other cases they fall far short of such coverage. In any case, the loss of one or more of the animals within the group calls for indemnity equal to the value of the animal, or to such maximum sum as may be stipulated in the by-laws as to indemnity for any one animal. Only in case the value of the animals lost exceeds the blanket amount on the group or class of animals, does the insured fail to receive essentially full insurance compensation.

"This blanket plan has proved decidedly inequitable in many instances. The farmer with only two or three horses or mules finds it necessary to carry an amount of insurance sufficiently large to protect the group on a regular insurance basis. The larger farmer, on the other hand, with ten or twenty horses or mules, may be satisfied to pay for an amount of insurance no larger than that carried by the first farmer, reasoning that the probability of loss of more than two or three animals at one time is very remote. In effect, therefore, he very largely protects his entire group of horses and mules at a cost no greater than that paid by the small farmer for the protection of the whole of his very much smaller group. The same inequity frequently occurs with reference to cattle, perhaps in more exaggerated form.

'Specific Insurance Plan.'

" 'Specific insurance' among farmers' fire mutuals was developed in order to avoid the inequities in the 'blanket' plan of insurance. A few of the farmers' mutual fire associations or companies have devised the plan of making livestock protection

*Called collective or group insurance abroad since 1840. Group life insurance on human beings was inaugurated by Emperor Napoleon III in 1868 when the "Securite Generale" was founded in France, with Cornelius Walford as consulting actuary.

specific with reference to each animal. In territories where relatively large groups of cattle or horses are kept on the farm, this plan is impracticable, however, since each of the individual animals cannot conveniently be described in such way as clearly to distinguish it from all others. Furthermore, the keeping of records of this type of specific insurance becomes unduly complex and troublesome both for the company and for the insured.

'Prorating or Distribution Plan.'

"The prorating or distribution method seems to be more practicable in that it provides reasonable justice between members in the insurance of their livestock. This plan is essentially a modification of the blanket plan. A fixed amount is written on horses and different amounts on cattle, sheep or hogs, as the case may be. But the contract specifically stipulates that in the case of the loss of an animal, the indemnity due shall not exceed the value of the animal or a maximum amount in the case of any one animal of a given class. Nor shall the indemnity exceed an amount equal to the total insurance on the group or class of animals, divided by the number of animals in the group.

"If an insured under the 'prorate' plan attempts to protect 20 horses by \$500 of insurance, he will find in the case of the loss of 1 horse that he can collect only one-twentieth part of \$500, or \$25. He is compelled, therefore, in order to enjoy reasonable protection, to carry and pay for an amount of insurance which has a reasonable relation to the number and value of the groups of animals covered. This plan appears to be gaining rapidly in favor among progressive local associations of farmers in the United States.

"In justice to those who still employ the simple blanket plan in insuring livestock, it should be said that most of them aim to compel the insured to carry an amount equal at least to one-half or two-thirds of the value of the animals covered. There is under this plan, however, a decided temptation on the part of owners of large groups of animals to carry as small an amount of insurance as they can induce the representative of the company or association to accept."

These organizations are in addition to the horse insurance and detective companies organized by local groups of farmers, the record of which goes back to 1828 in the United States.

8. LOSS EXPERIENCE ON ANIMAL INSURANCE

A loss in livestock insurance must result from the particular peril against which the insured is indemnified. Three important circumstances may be noted at this point which set aside liability of the insurer, according to Lehman. Where a policy, insuring against loss by the death of an animal excepts destruction by any society for the prevention of cruelty to animals, the insurer is not liable for death so produced, although the animal was killed on the ground that it was incurable. Under a policy insuring against death by disease or accident, an intentional destruction of the animal because it was incurably sick, is not authorized. If the death of an animal results from mistreatment by the insured, no recovery can be had for the loss.

Some crude data on the recent loss experience for mutual and proprietary livestock carriers in the United States are shown in the following table:

TABLE 2
PER CENT. LOSSES OF NET PREMIUMS
Mutual and Stock Live Stock Insurance in the United States
in Recent Years

Year	Mutual Companies			Stock Companies			Per cent. Underwriting expense of net premiums, Mutual Companies
	For total com- panies reporting	Company 1	Company 2	For total com- panies reporting	Company 1†	Company 2	
1926	58	52	63	74	71	86	34
1925	53	53	61	66	66	107	40
1924	66	63	68	66	69	32	37
1923	62	72	54	79	72	42	34
1922	52	59	58	77	79	35	44
1921	55	55	49	*	56	568	48
1920	53	47	46	*	79	222	48

Source: Argus Casualty Charts

*Not available

†Incurred loss of earned premium.

Some idea of the mortality among farm animals may be obtained from the following table which is based upon the returns made by the crop reporters in the service of the United States Department of Agriculture. It will be seen that the mortality among farm animals is variable, from year to year, especially for swine.

TABLE 3
ESTIMATED YEARLY LOSSES FROM DISEASE, ACCIDENT OR
EXPOSURE IN THE UNITED STATES, PER 1,000 HEAD
OF CATTLE OR OTHER LIVESTOCK

Year	Cattle		Swine Total	Sheep		Horses and Mules
	Disease	Exposure		Disease	Exposure	
1924	17.8	12.7	52.9	20.0	17.5	15.2
1923	16.7	13.1	51.3	22.4	24.1	15.0
1922	17.8	13.1	54.4	21.4	26.4	15.7
1921	17.0	9.2	43.0	23.1	15.6	14.7
1920	19.5	18.5	49.8	23.7	34.6	17.8
1919	17.4	15.9	41.4	19.7	24.4	15.7
1918	18.2	13.3	42.1	19.8	19.3	16.5
1917	19.4	14.6	48.6	21.8	32.4	16.9
1916	19.5	10.7	66.2	21.6	21.7	17.5
1915	....	....	....	....	....	....
1914	19.8	10.9	118.9	21.9	22.0	20.6
1913	20.5	14.1	110.1	24.8	25.0	22.6
1912	21.6	21.5	89.2	26.7	47.0	21.9
1911	19.7	13.3	44.8	25.5	23.0	19.0
1910	21.0	17.6	45.1	27.5	43.9	19.9
1909	19.2	14.8	51.0	26.6	28.3	18.2
1908	18.9	12.0	52.4	22.5	22.9	17.1
1907	19.9	13.7	48.9	25.6	35.4	18.9
1906	20.1	14.9	51.1	22.2	37.0	17.7
1905	20.6	23.3	50.8	24.6	30.8	17.9
1904	23.6	20.2	57.9	26.0	37.7	19.6
1903	23.9	23.7	58.2	27.8	53.6	19.7
1902	21.3	18.2	51.5	25.0	31.6	20.2
1901	22.3	11.5	74.7	24.0	22.0	18.2
1900	19.9	13.7	64.4	20.0	18.0	18.3
1899	20.3	22.1	82.1	21.0	35.0	23.4
1898	19.7	13.0	92.8	26.0	27.0	20.0
1897	19.4	16.0	144.0	23.0	32.0	21.3
1896	19.3	11.3	127.0	27.0	21.0	20.2
1895	21.4	20.7	92.3	26.0	29.0	22.3
1894	19.0	12.5	48.6	20.0	15.0	21.0
1893	16.6	17.3	63.1	24.0	20.0	17.0
1892	12.8	13.0	54.4	19.0	14.0	15.3
1891	14.3	15.3	83.7	23.0	17.0	16.6
1890	13.0	23.0	76.1	24.0	51.0	16.4

Source: Crop Reporting Service of U. S. Dept. of Agriculture

The hog mortality experience in some States of the Union has shown as high a return as 215 deaths per thousand hogs in one year. This return prevailed in Illinois in 1911, where it was estimated that nearly six million hogs died. At an average value per head of \$8, this meant a loss in that State alone of \$47,000,000.

The foregoing table shows that a destructive experience prevailed also in the years 1913 to 1914. Occasionally foot and mouth disease becomes widely prevalent. There were outbreaks of this disease in 1902, 1908, 1914 and 1915 and in 1924-1925. Hog cholera is, of course, the chief source of loss from epidemic disease among this type of farm animal. It is estimated that 80 per cent. of the loss of swine from disease is due to hog cholera. Swine fever and hemorrhagic septicemia are also important causes of mortality among hogs.

There has never been any serious epidemic among sheep in the United States. The principal loss here is due to exposure, forage poisoning and parasites. Loss from disease among animals in the United States is believed not to be as heavy as in other countries. Some twenty-five important diseases among livestock have been identified as major factors in the loss experience of the carriers.

The ingestion of metallic objects in feed,—bail wire, nails, etc. is an important source of loss.

Actuarial Investigation of Loss Experience Needed.

It is hoped that at some future time an actuarial investigation may be made into the causes of mortality among livestock, distinguishing at least the age of the animals. No data are available on the mortality of pure bred cattle in the United States. All of the writers on livestock insurance deplore the lack of descriptive data on loss experience. They suggest that if livestock experience could be secured, classified and published in the required detail, some concerted action could be taken against abuses in the business.

Horse Mortality Experience, by Ages, Sweden, 1892-1925.

The following table, contributed by Dr. Victor N. Valgren, relates to the mortality among horses insured by the Scandinavian Livestock Insurance Company, Stockholm, Sweden, for the period 1892 to 1925. This is the only mortality table for animals available in the literature where distinction of age is made.

TABLE 4
DEATH RATE PER 1,000 HORSES INSURED, 1892-1925 BY
SINGLE YEARS OF AGE
Scandinavian Live Stock Insurance Company, Stockholm, Sweden*

Age	Rate per 1,000	Age	Rate per 1,000
1	28.5	13	32.2
2	13.9	14	34.8
3	13.6	15	35.6
4	15.1	16	33.6
5	17.1	17	32.3
6	18.9	18	27.5
7	20.4	19	18.7
8	22.2	Ages 1 to 5 Ages 6 to 10 Ages 11 to 15 Over 15	16.6 21.2 31.6 26.7
9	22.9		
10	27.2		
11	27.6		
12	30.5	All ages	23.1

*Data from Dr. Victor N. Valgren, April 17, 1928.

Table based on 2,479,404 full years of exposure. Includes slaughtering of animal as result of sickness or accident; also cases of disability for which indemnity was paid. See also: "Bericht über die fünfunddreissigjähre Tätigkeit der Gesellschaft, 1890-1925," *Skandinaviska Kreatursförsäkringsbolaget*, Stockholm, Sweden, 1925, page 18.

A section from the gain and loss exhibit of one of the American proprietary companies from July 1, 1922 to June 30, 1925, is shown below.

TABLE 5
UNDERWRITING AND INVESTMENT EXHIBIT, JULY 1, 1922
TO JUNE 30, 1925

<u>UNDERWRITING</u>	
Premiums earned.....	\$2,836,480.11
Gain from underwriting profit and loss items.....	38,960.52
Underwriting income earned.....	2,875,440.63
Losses incurred.....	\$2,035,376.93
Commissions incurred.....	403,786.51
Taxes incurred.....	39,788.41
Overhead expenses incurred.....	504,863.02
Total losses and expenses incurred.....	2,983,814.87
Loss from underwriting.....	\$108,374.24
<u>INVESTMENTS</u>	
Interest earned.....	\$118,167.76
Gain from change in difference be- tween book and market value of securities.....	7,505.00
Gain from sale of securities.....	11,745.31
	137,418.07
Less investment expense.....	3,497.40
Gain from investments.....	\$133,920.67

<u>RECAPITULATION</u>	
Gain from investments.....	\$133,920.67
Loss from underwriting.....	108,374.24
Net gain to surplus.....	<u>\$25,546.43</u>
Surplus, June 30, 1925.....	158,017.46
Surplus, June 30, 1922.....	<u>132,471.03</u>
Net gain to surplus.....	<u>\$25,546.43</u>

<u>ANALYSIS OF EARNED PREMIUMS</u>		
	<u>Amount</u>	<u>Per cent. of earned premium</u>
Losses and loss expense incurred.....	\$2,035,376.93	71.76%
Commissions incurred.....	403,786.51	14.23%
Taxes incurred.....	39,788.41	1.40%
Overhead expenses incurred.....	504,863.02	17.80%
Total.....	<u>\$2,983,814.87</u>	105.19%
Loss from underwriting.....	108,374.24	3.82%
Gain from underwriting profit and loss items.....	38,960.52	1.37%
Premiums earned.....	<u>2,836,480.11</u>	100.00%
Total.....	<u>\$2,983,814.87</u>	105.19%

In addition to epidemic disease, heavy losses among farm animals are occasioned by high water and floods. In 1913, during the Ohio River floods, livestock insurance companies suffered heavily in Ohio and Indiana. It is estimated that in these two States more than 50,000 horses and over 10,000 cattle were destroyed by the flood, a large portion of which were insured. Lightning is an especially important hazard in the field of sheep insurance. It is recorded that for one Utah sheep ranch, some years ago, a single lightning bolt killed 504 out of 1,250 sheep on a hillside. In Ohio, 20 head of cattle were killed by a single flash of lightning.

Some of the difficulties in the claims branch of the business may also be considered. Where insured animals are not branded or earmarked, it is more or less difficult to identify the animal. Furthermore, determination of the cause of death is not always practicable. Nor is it possible to detect easily the deliberate causation of sickness or of injury to the animal. There seems to be no hesitation on the part of the insured to take animal insurance lightly and to pass on a loss to someone else. Then finally, there is the perplexing problem of determining the value of the animal at issuance of the policy, setting the percentage of co-insurance and then valuing the animal at death.

9. EARLY HISTORY OF ANIMAL INSURANCE

It may be well to set forth some of the more important historical developments in animal insurance prior to the conduct of the business by incorporated insurance institutions. The earliest indication we have of a resemblance to an insurance system covering animals may be found in records of primitive forms of insurance.

India.

There are few *Bradris* in India today that have not some simple system of protecting members against the important contingencies of daily life. The history of mutual aid societies in India shows that such institutions were mentioned in the *Ramayana*,* *Mahabharata*† and other historical religious books of the Hindus that date thousands of years B. C. Even today the most primitive societies in India follow the mutual aid system laid down in antiquity as faithfully as any of the more modern institutions pursue their practices. These very early Hindu societies granted aid to members at death, at marriage, at the birth of children and on the loss of cattle. Ancient India was the mother of insurance. It is quite possible that the relatively modern insurance practices and laws of the Babylonians, B. C. 2,250 came originally from India and China.

The English Gilds.

The Gild of Cnihts, in London, 860-866 A. D., seems to have been very much in the nature of a mutual insurance association. Among its ordinances is stated the object of the Gild to be the recovery of stolen stock and slaves, wherever that recovery was practicable; and where that could not be effected, then the indemnification of the loser by pro rata contributions‡ of the brethren. This is in essence indemnity under the mutual assessment principle. Each of the brethren of the Gild was to contribute 4d. to the common fund, payment for stolen property to be made as soon as contributions were in hand. Horses were

*A Sanskrit myth depicting the adventures of *Ramachandra*, the seventh reincarnation of Vishnu, second god of the Hindu Trinity.

†Myth of northern India.

‡Anglo-Saxon money, where one pound of silver was the unit. See: Alexander Delmar. "History of Money....from the Earliest Times to the Present." London. Bell and Co., 1889.

to be paid for at the maximum rate of a half-pound of silver; oxen at a mark; a cow at 20*d*; a hog at 10*d*. and a sheep at 1*s*. The money required over and above the regular contributions in hand was raised by an assessment among the brethren.

In one of the statutes of the London Gilds, A.D. 925-941, there are regulations for the suppression of theft and the compensation of persons losing animals or other property by theft. In this era, contributions to the common fund were made not only by Gild members, but also by non-members living in the district in which the Gild existed.

Later European Developments.

Professor Manes tells us that a co-operative arrangement for the sharing of cattle losses prevailed in ancient Palestine among mule drivers. There seems to have been also mutual cattle insurance in Iceland in the twelfth century. The beginnings of cattle insurance are to be found also in the thirteenth century in Spain, Holland and Northern Germany. In the latter country, there were at that time many local cattle insurance societies or clubs, the idea persisting in form to the present day.

According to a regulation of the Gild of Kyllyngholm, founded before A. D. 1310 in Lincolnshire, England, "if a Brother or Sister is unlucky enough to lose a beast worth half a mark, every Brother and every Sister shall give a half-penny towards getting another beast." At about the same time the Gild of St. Anthony in Lenne, Norfolk, provided that "help be given members who lose cattle."

Marine Insurance on Cattle, 1556, Spain.

In the insurance ordinances of Spain, 1556, there occurs the following reference to the coverage of marine hazards on cattle: "in insurances made upon slaves or cattle, it must be declared in the policy that it is on them; otherwise the insurers run no risk; and if any beast is thrown overboard, it shall not be brought into a gross average, but the insurers shall satisfy the loss." Here is implied the insurance of cattle against the risks of the sea, a venture quite different from insurance against death by disease or accident.

Horse Insurance During the South Sea Bubble Era.

During the reign of Queen Anne, the period of the South Sea Bubble, 1710 to 1720, a project was set on foot in London for insuring horses "either dying natural deaths, or stolen or disabled."

The capital for the enterprise proposed was two million pounds sterling. The company failed. In extending insurance on horses "stolen," it outventured itself; but that seemed to be one of the major risks which was required to be covered by insurance at that time.

The first *governmental* cattle insurance institution was founded by Frederick the Great in Silesia in the middle of the eighteenth century. Cattle owners were compelled to join. Compensation was paid against cattle plague, fire and lightning. A similar institution was founded in Friesland in 1782.

In 1774, an office was established in Copenhagen, Denmark, at which the insured were to pay a sum to be fixed per head of their cattle annually. The insured were to receive 10 crowns for each animal that should die of distemper. Toward the end of the eighteenth century and during the first half of the nineteenth, there were scattered all over England innumerable associations for the mutual insurance of cattle. Many of these were simply cow clubs, while some took on a wider scope. They were simple associations having no defined legal standing; and were conducted mostly on the principle of mutual contribution. At times they broke down during special emergencies. Of special note is the formation of "Sprott Friendly Cow," a friendly society or club of cow owners. In 1807, the Farmers' United Cow Club was formed in Mawdesley, Lincolnshire, and was in existence in 1898 as a registered friendly society.

Some historical notes on the modern development of livestock insurance in the several countries are now presented.

10. HISTORICAL NOTES ON MODERN CATTLE INSURANCE IN VARIOUS COUNTRIES

(a) *Australia.*

Livestock insurance has no great vogue in Australia, although the subject has been discussed sporadically since 1850. About fifteen years ago this type of coverage was offered on horses and stud sheep, but the business proved to be unprofitable. The line is now written for special clients only. The companies are not eager for the business.

(b) *Austria.*

In the old Austro-Hungarian Empire, numerous local mutual cattle insurance societies have existed since the earliest times. In 1865, a large private cattle insurance company was founded.

In 1871, there were in existence five mutual cattle insurance institutions, the Apis, the Mutual Cattle Insurance Union of the Society of Milk Farmers, both in Vienna; the Cattle Insurance Institution in Feldkirch, Vorarlberg; the Mutual Horned Cattle Insurance Society in Spitz, Lower Austria; and the Prometheus Mutual Insurance Union at Linz, Upper Austria. In 1898, there was founded the Hungarian Cattle Insurance Association in Budapest. Beginning with 1900, State cattle insurance institutions were founded in Lower Austria, Mähren and Kärnten, modeled after the Bavarian plan. The institution for Lower Austria had a sub-society for the encouragement and transaction of horse insurance and received State subvention. Throughout Austria in 1901, there were about 160 local cattle insurance societies affiliated with the State institutions.

Between 1885 and 1894, cattle insurance in old Austria seemed to fall off very rapidly. This followed perhaps from the heavy loss experience. The collected figures for the period 1886 to 1895 showed premiums of 2,073,398 crowns and losses of 2,213,285 crowns, or a loss ratio of 106.7 per cent.

In 1905, the Vorarlberg institution had 11,200 animals insured for a sum of 4,044,000 crowns and paid losses of 69,400 crowns. The Budapest Association had, in 1907, 35,000 cattle insured for 13,950,000 crowns, and reported losses of 211,000 crowns.

At the present time in Austria, animal insurance is practiced by the Burgenlandische Versicherungsanstalt at Sauerbrunn, founded in 1925; the Upper Austria Institution for Horse Insurance at Linz, founded in 1906; the Upper Austria Institution for Cattle Insurance at Linz, founded in 1902; the Upper Austria Institution for Goat Insurance, at Linz, founded in 1902 and the Versicherungsanstalt der österr. Bundesländer, Vienna, founded in 1922.

(c) *Belgium.*

In 1846, a project was before the Government of Belgium that certain branches of the insurance business should be undertaken by the State. A Commission was appointed, and it reported in favor of the proposal. Among other things, it suggested that the insurance of cattle be incorporated in a plan for State insurance. A further commission was appointed. It reported against the project mainly because (1) the varying value of animals and the difficulty of making the precise calculations required to fix the

premiums and amounts of insurance; (2) the difficulty of avoiding loss caused by the carelessness or deliberation of the owner; and (3) the uncertainties as to loss which might occur through severe epidemics in spite of the utmost care and skill employed by cattle owners and the State. Lastly, there seemed to be an insurmountable obstacle of proving the cause of death of animals and the uncertain manner in which epidemics of cattle disease spread.

(d) *Bulgaria.*

At the present time cattle insurance in Bulgaria is transacted by the *Misla*, at Sofia, founded in 1924.

(e) *Burma.*

For this country, we have a brief note to the effect that mutual cattle insurance societies were in vogue some 15 years ago. In Burma the territory of a cattle insurance society is ordinarily limited to one village.

Insurance is optional. Plow bullocks and buffaloes, between the ages of 4 and 12, are insurable. Valuation is made every six months when the premiums are paid, and these are at the rate of 5 per cent. per annum. On the death of the animal, an indemnity of two-thirds of the existing value, less the salvage on the hide and carcass, is paid. A Reinsurance Society has been organized for the whole of Burma, of which the Registrar is the president and ex-officio manager. Half the premiums collected by the local insurance society are deposited with the Credit Bank. The other half is sent to the Reinsurance Society along with a list and particulars of insured cattle and their valuation. This is done every half-year. If an animal dies, half the indemnity comes from the Reinsurance Society and the remaining half is made good from the funds of the primary insurance clubs.

The funds of a local society are divided in two ways: first, there is the general fund consisting of all premiums realized during the year and, second, the reserve fund consisting of fines, entrance fees, donations, profits of previous years, etc. If the premium income is insufficient to meet half the claims, half of the reserve fund may be drawn upon in any one year, with the Registrar's sanction, to meet the deficiency. If the funds are still insufficient, the disbursements during the year are proportionately

reduced. So far, no society has suffered a deficit. The Reinsurance Society was organized in 1915 and banks with the Upper Burma Central Bank, which is the Provincial Cooperative Bank for Burma.

(f) *Canada.*

No extensive historical information on livestock insurance is available for Canada. In 1927, the net premiums written were \$82,179 and net losses incurred \$73,306. Most of the insurance on livestock in Canada last year was carried in the Hartford Livestock Insurance Company. The Canadian General has \$11,022 and the Yorkshire, \$16,245 of the net premiums written in that year. The General Animals Insurance Company operated in Canada some years ago. For the nineteen years ended December 31, 1926, the livestock premiums in Canada \$1,763,725 and the losses \$1,039,413.

(g) *Czechoslovakia.*

The Cattle Insurance Institute of Czechoslovakia was founded in 1902, and is managed and supported under State auspices. It operates through local societies which may be organized if enough owners so desire, and if they possess at least 50 head of cattle. Horses are insured directly by the State institution. On cattle, the premiums range from 1.35 per cent. for an insurance of 1,500 crowns, to 2 per cent. for an insurance of 5,000 crowns. On horse insurance, the premiums range from 2 per cent. for a coverage of 2,000 crowns up to 4 per cent. for insurance of 6,000 crowns. These rates apply if the horses are used exclusively for agricultural work on the owner's estate. When horses are used in outside work, the rates are increased by three-quarters per cent. and for heavy drayage the increase is 1.50 per cent. In addition to these two general types of insurance, the State Cattle Insurance Institution offers special coverage against the risk of foaling and for risks of surgical operation, show and exhibition and transport. The loss ratios for horned cattle and for horses are shown in the following table.

TABLE 6
PER CENT. LOSS RECKONED AGAINST INSURED ANIMALS
AND AMOUNT OF INSURANCE, 1902 TO 1924
Cattle Insurance Institute of Czechoslovakia (Moravia)

Year	Horned Cattle		Horses	
	Deaths per hundred cattle	Loss per hundred crowns insured	Deaths per hundred horses	Loss per hundred crowns insured
1902	3.15	3.31	3.61	3.44
1903	3.00	3.26	3.66	3.99
1904	3.18	3.49	4.28	2.94
1905	3.73	3.49	4.00	3.46
1906	3.06	3.28	3.67	3.21
1907	3.23	3.49	4.37	3.87
1908	3.74	4.05	3.82	3.26
1909	4.19	4.40	4.38	3.98
1910	2.70	3.00	5.49	4.62
1911	2.84	3.19	6.09	5.22
1912	3.17	3.47	4.28	3.92
1913	2.73	3.11	4.74	4.63
1914	3.15	3.46	5.14	4.62
1915	2.05	2.18	3.49	3.35
1916	1.34	1.62	3.17	3.15
1917	2.17	2.81	4.46	4.90
1918	3.33	3.93	3.55	4.02
1919	1.45	1.93	2.37	3.03
1920	1.40	2.14	2.47	3.23
1921	3.07	4.22	4.48	5.42
1922	5.77	7.24	4.77	5.62
1923	8.13	8.48	4.17	3.97
1924	2.59	3.11	4.17	4.16

Note: First publication of this table

The *Moravska Zemska Dobytoi*, at Brünn, founded in 1902, transacts livestock insurance at the present time.

(h) *Denmark.*

We have already indicated that cattle insurance has been practiced since antiquity by the Gilds in Denmark. In 1904, there were 1,057 mutual benefit societies of dairy farmers in Denmark, totaling 140,000 members, and owning 850,000 cows, which was three-quarters of the entire cow population of the country. Cattle insurance through mutual clubs is almost as old an institution as the voluntary sickness insurance clubs in Denmark. For a long time, the Danish Government has furnished protection against cattle epidemics, but the farmers sought to protect themselves further from the loss of cattle through disease and accident. In 1900, there were 365 horse insurance societies, 214 cattle insurance societies and 113 mixed societies. About one-ninth of the mixed societies were founded

before 1851, as was one-twenty-third of the horse insurance societies and one-seventeenth of the cattle insurance societies. The average age of these mutual societies in 1904 was 26 years. An average horse insurance society had 118 members and in cattle insurance, 72 members. The mixed societies were somewhat larger, averaging 258 members. The horse insurance societies had about 45,000 members, the cattle clubs, 16,000 and the mixed societies 30,000. That these institutions protected the small owner may be seen from the fact that the average number of horses per member was 2.9, and the average number of cattle, 2.6. The sums insured were quite modest, an average of 400 crowns for horses and of 167 crowns for cattle. The average premium for horses was 1.71 per cent. of value and for cattle, 1.76 per cent. over the years 1896 to 1900. The loss statement in the year 1900 was as follows:

TABLE 7
LOSS EXPERIENCE OF DANISH ANIMAL INSURANCE CLUBS,
1900

Horse insurance clubs:	
Losses per 100 members.....	11.0
Losses per 100 horses.....	3.7
Average amount per loss.....	187 crowns
Loss per 100 crowns insured.....	1.93
Cattle insurance clubs:	
Losses per 100 members.....	7.1
Losses per 100 cattle.....	2.7
Average amount per loss.....	102 crowns
Loss per 100 crowns insured.....	1.93

Before horses were insured, they were inspected by two members of the society. Only healthy horses under 18 years of age were taken and must have had a value of at least 100 crowns. When there was doubt about the health and value of an animal proposed, a veterinary was called in. The expenses of the societies were modest. Presidents and treasurers received no compensation. In some societies, the officers were paid a small honorarium twenty crowns in one society and six crowns in another.

At the present time, insurance on animals in Denmark is conducted by the Livestock Insurance Society of Copenhagen, founded in 1859, and the Kustos Livestock Insurance Society, Aarhus, founded in 1881; and by the Skandinavisk Hesterforsikrings, Copenhagen, founded in 1916, for the insurance of horses. These are in addition, of course, to the many local mutual cattle clubs now operating in that country.

I am informed that a Dr. Mackeprang has made an attempt to construct a mortality table for horses from Danish experience.

(i) *England and Scotland.*

Corporate enterprise in the livestock insurance field in England seems to have been inaugurated in 1844 by the Farmers and Grazers Cattle Insurance Company. This organization carried on business until 1853, when it passed into liquidation. Many of its claims were never paid. In 1845, the Agriculturist Cattle Insurance Company was founded. This Company rapidly acquired a considerable business, absorbing several of the small local cattle insurance companies and leading to the dissolution of the many of the provincial cattle corporations in existence at the date of its advent. A few years of practical operation were necessary to enable this company to consolidate its experience and set rates for the safe conduct of this type of insurance. In 1851, this company charged for the insurance of dairy cows $7\frac{1}{2}d.$ to the pound; for feeding stock, $6d.$; for young stock under one year of age, $1s.$ to the pound; above one year, $7\frac{1}{2}d.$ For bulls not exceeding the value of £20, $1s.$ to the pound. For bulls exceeding £20 and not exceeding £40, $1s., 3d.$ to the pound. Prize bulls were insured for $2s.$ and upwards per pound, according to value and other circumstances. Cows kept in towns were insured at from $1s. 6d.$ to $2s.$ to the pound depending on the character of shelter and care received by these animals. Working oxen were insured at $7s.$ to the pound. This company also had differential rates for horses, whether used for agricultural purposes or for pulling pleasure vehicles. Insurance was also granted on sheep and pigs.

This company was founded with an authorized capital of £500,000, amount paid up, £76,274. The shares were well subscribed, and at one time were sold at a premium. The original prospectus stated that the company was founded for the protection of farmers against losses by disease or accident among their livestock. In 1848, however, through a reckless system of management, the company got into difficulties. After investigation a new board of management was elected and the rates were increased from $2\frac{1}{2}$ to $3\frac{1}{2}$ per cent. above these originally charged; while the allowance in case of loss was reduced from $\frac{3}{4}$ to $\frac{2}{3}$ the value of the animal dying.

The company had extended its operations also to life insurance on human beings, but it did a very small business in this department, and afterwards transferred the insurances to the Norwich Union. In 1851, it took over the business of the Essex Mutual Cattle Company, and in the same year also the business of another cattle association in Lincolnshire. In 1861, the company found itself again in difficulties and passed into liquidation. The affairs of the company were not closed up until well after 1871.

The United Kingdom Cattle Insurance Company was founded in 1847, but did business only for a few years. In the end, many of the claims were unpaid. The North Staffordshire Mutual Cattle Insurance Company was founded in 1849, and about the same year, another company was projected for insuring cattle while on railway journeys.

The Norfolk Farmers Insurance Company was established in 1849. It speedily took the leading position in this branch of the business and for many years weathered the vicissitudes of successive plagues of cattle pneumonia and other diseases. The National Livestock Insurance Company was established in 1853 and remained in business until 1862, when it merged with the Norfolk Farmers. The same year saw the establishment of the General Livestock Insurance Company, which, after carrying on a considerable volume of business, passed into liquidation in 1857. Its business connections were transferred to the London and County Hail & Cattle Insurance Company founded in 1854. This company in turn ceased business in 1859, when it transferred its interests to the Norfolk Farmers. The Pontefract & West Riding Horse & Cattle Insurance Company was established in 1857, and seemed to do a fairly successful business for some twenty years after its establishment. The Provincial Horse & Cattle Insurance Company was established at Nottingham in 1862, and according to the records was in business in 1867.

Many of the companies, established in the middle of the nineteenth century in England, came to a disastrous end in consequence of the cattle plague which wrought such havoc among farm animals in England in the years 1864 and 1865. The plague itself, however, stimulated public interest in livestock insurance protection and resulted in the formation, about 1865, of no less than 22 companies offering insurance specifically against

cattle plague, pleural pneumonia and rinder-pest. With the passing of the prevailing cattle diseases, the companies were allowed, almost without exception, to die. Among the companies founded in that era were the Altrincham Cattle Plague Insurance Association, the Banbury Cattle Plague Insurance Company, the County Cattle Insurance Company of Hertford, the Kendel Union Cattle Insurance Company, the South Lincolnshire Cattle Insurance Company and the Warwickshire Cattle Insurance Company. The year 1866 saw the establishment of the Langport Union, the Tetbury Mutual and the West Dorset Cattle Insurance Company.

In 1866, there was passed the 29 and 30 Victoria, c. 34, the object of which was to encourage the formation of local cattle insurance associations which were so much needed in consequence of prevailing cattle diseases. The main provisions of the Act were first, that notwithstanding anything in 18 and 19 Vict. c. 63 relating to Friendly Societies, a club or society could be established for the insurance to any amount against loss by death of cattle, sheep, lambs, swine and horses from disease or otherwise; and neither the provisions in Section 9, that no member shall subscribe or contract for a sum payable on death or any other contingency exceeding £200, nor Section 38, of the Friendly Societies Act, should apply to any such society established or which might thereafter (June 11, 1866) be established for such purpose. The second important feature of this act was that all contributions, premiums and other payments payable by any member of such local society in respect to any insurance affected by him shall be considered as a debt due by him to the society and should be recoverable as such in the county court of the district within which the usual or principal place of business of the society was located. There is no definite record of the formation of any local associations under the provisions of this Act. In 1869, the Lake Districts Farmers Cattle Insurance Association was founded.

It may be of interest to note, that at this time in the history of livestock insurance in England, the companies paid a commission of 10 per cent. to agents on new business and 5 per cent. on renewals. The inspectors of cattle for the companies were paid by fee.

The Warden Insurance Co., Ltd., was established in 1877. It

is still in business and insures horses and cattle, stallions, mares in foal and foals. The business of this company was for many years developed slowly and soundly.

The Horse, Carriage and General Insurance Company.

The Horse Insurance Company, Ltd., was founded in 1868, and in 1892 was united with the London & Provincial Horse and Carriage Insurance Company founded in 1873. The name of the combined companies was then the Horse, Carriage and General Insurance Company. This company, throughout its history, has had a successful and honorable experience. This experience was attained in an era between 1870 and the present date when nearly all livestock insurance companies in England were operated at a loss. Throughout the history of the Horse, Carriage and General Company, the directors of the company have always been careful to maintain ample reserves for unexpired liability and as a buffer against exceptional loss experience. The stockholders of the company have over many years enjoyed a total dividend of 15 per cent. annually, largely from interest revenue and only incidentally from underwriting profit. The significant fact was, however, the persistent, if small, underwriting profit. How this was accomplished would be of interest to livestock underwriters all over the world. The experience of this company, from 1893 to 1903, is given in the following table.

TABLE 8
HORSE, CARRIAGE AND GENERAL INSURANCE COMPANY,
ENGLAND. LIVESTOCK EXPERIENCE, 1893 TO 1903

Year	Premiums	Percentage to premiums:	
		Claims	Expenses
1893	£31,377	59.1	37.4
1894	34,845	60.3	37.3
1895	37,501	59.3	35.9
1896	38,288	61.3	36.1
1897	37,010	67.6	36.3
1898	34,021	60.7	36.2
1899	40,325	55.8	33.8
1900	41,482	59.0	32.8
1901	44,678	55.6	34.8
1902	46,964	62.3	33.6
1903	50,508	54.8	34.1

The Friendly Societies Act of 1896 provided for the registering of local mutual cattle insurance clubs. The experience of such societies for the period 1915 to 1925 is shown below.

TABLE 9
CATTLE INSURANCE SOCIETIES, 1915 TO 1925
Registered under the Friendly Societies Act, 1896, Great Britain

Year	Number of Returns	Number of Members	Contributions £	Benefits £	Number Insured			Funds £
					Cattle	Swine	Horses	
1925	60	3,075	4,379	4,716	22,073	8,213	483	11,239
1924	58	3,182	3,557	3,548	19,164	3,049	509	11,164
1923	60	3,448	3,570	3,812	15,265	3,429	503	11,034
1922	62	3,611	4,284	4,574	17,700	3,356	503	11,323
1921	62	3,893	5,723	4,333	19,940	3,891	500	11,396
1920	65	3,854	3,191	5,032	18,187	3,402	481	9,882
1919	66	3,868	2,778	3,456	15,382	3,276	410	10,985
1918	64	3,818	2,563	2,170	15,134	2,537	383	10,868
1917	66	3,636	3,588	4,046	30,845	3,127	374	9,850
1916	66	3,641	*	3,757	29,192	3,759	382	9,654
1915	68	3,730	*	*	28,524	4,040	443	9,408

*Particulars not available.

The foregoing record, of course, relates only to those societies which report to the Registrar. It does not include the more than 1,000 pig clubs, the 157 cow clubs and an unknown number of mutual societies insuring horses in England. It may be well to note, at this time, the distinguished work done by Sir James Wilson in investigating the history and experience of these mutual animal insurance clubs. As a result of his investigation, it was possible by the former Board of Agriculture and Fisheries, now the Ministry of Agriculture and Fisheries, to prepare and to issue model rules and explanatory guidance for persons in England desiring to start these local clubs. The largest local society is that at Whixal in Shropshire, founded in 1842, and having about 300 members, insuring 1,395 cows and calves.

These registered societies are supposed to keep separate accounts of insurance and management expense. The management expense of 13 societies, for salaries chiefly, averaged only 5*d.* per annum per animal in 1911-1913. A system of reinsurance for local societies was arranged by the Ministry of Agriculture and Fisheries with the Agricultural and General Cooperative Insurance Society, Ltd. of London. If this latter society is satisfied regarding a local club's financial position it undertakes to carry one-half of the club's net risks in return for half the insurance contributions of the members, less one-tenth of that half.

In general, it may be said that until about 1912, commercial livestock insurance in England was mainly in the hands of four companies writing that line exclusively, but since then, most

of the large mixed line companies have added this business to their other activities. Some 89 companies write the line to a greater or less extent in England at the present time.

MODERN LIVESTOCK INSURANCE PRACTICE IN ENGLAND

It may be in order to remark on certain of the current practices in England. The Liverpool and London and Globe, through its general manager, Mr. Hugh Lewis, reports the following covers: horse and cattle risks; transit and show risks; stallion insurance, foaling risks; castration risks and anthrax insurance. The rates for given sums insured on horses are presented for five distinct risk classes. The standard table applies to horses under 9 years of age. Horses above that age are not insured for more than $\frac{2}{3}$ value and an extra premium of 20 per cent. of the standard premium is charged for each year of age over nine.

The risk classes on horses are as follows: Class 1, private carriage and saddle horses, excluding hunting risks; Class 2, farm horses over 12 months of age and horses used in light delivery service; Class 3, horses used by brewers, cabinet makers, furniture dealers, etc., and polo ponies and hunters, also colts and fillies 6 to 12 months old; Class 4, covers horses used by builders, country carriers, general dealers, also hunting horses in point-to-point races, and colts and fillies 30 days to 6 months old; and Class 5, covers horses used by coal dealers and other persons engaged in heavy haulage. Rates for blooded stock are quoted on special application.

The rates for cattle range from 4 per cent. on bulls 6 months and under 6 years of age to $6\frac{1}{4}$ per cent. for dairy cows and heifers. No compensation is paid for any animal destroyed under the Diseases of Animals Act or under any order by competent legal authority. It is interesting to note that one of the special advantages is that animals not over 9 years of age may be insured for full market value.

The general cover includes glanders, farcy, anthrax, rail transit and show risks without extra charge; insurances may be transferred to new animals, and rebates are given to unexpired risks if animals are sold. There is the usual requirement of immediate notice of illness, accident or death to the company and the exclusion of risks of foaling, castration and docking, except on payment of addition premium. No compensation is paid also if an

animal is slaughtered without the consent of the company. Death, resulting from fire, lightning or transit by water, is not covered nor is the loss occasioned through an animal becoming unfit or incapable of fulfilling the functions or duties for which it is kept. No liability is assumed by the company until full premium is paid and a policy or official cover is actually in the owner's possession. The transit and show risk policy of this company covers loss through death from accident or disease while in transit or while on exhibition at shows or sales, and excludes only the risk of death by water transit or from parturition. The three classes of rates of the transit and show policy relate to single journeys, 10 days travel on exhibition and 30 days cover. The rates include fire and lightning risks, while animals are off the farm or premises.

The stallion insurance is offered in season policies of 4 months, or on annual policies. These cover the risk of death from accident or disease on all breeds except blood stock. On a further table, insurance is offered on stallions against death from accident or death and from disablement. The disability compensation for stallions is payable for a period not exceeding 6 weeks during the service season while the stallion is totally disabled by accident or illness. No compensation is payable for the first 7 days of incapacity. Special rates are quoted for bloodstock stallions.

The foaling riskcover relates to mares not over 9 years of age and insurance is granted for full market value. In essence, this policy grants a cash return if mares prove barren, provided intimation is given to the company within 30 days after the expected date of foaling; and under annual policies, compensation is paid for both mare and foal if both are insured should the mare die prior to foaling and the existence of the unborn foal be proved. The castration risk provides cover for death from accident and disease for colts 6 months to 3 years old.

Animals over 3 and under 6 years of age carry an extra premium of 10 per cent. for each year, or part of year, after 3 years of age. Horses above 6 years of age are not insured against castration risk. While the castration policy is in force, it also covers death from accident or disease. An operation policy is also sold which covers the animal from the time of the operation until noon of the thirtieth day thereafter.

The anthrax cover protects against this special risk and the

sum insured is subject to average. If, when the loss occurs, the market value of the animals of the class insured, in the insured's possession is collectively greater than the sum insured, the company is liable only for the proportion which the sum insured bears to the market value. The foregoing description is, in general, typical of British livestock insurance practice both on general and special lines.

LIVESTOCK TARIFF ASSOCIATION IN ENGLAND

In 1911, the Royal Assurance entered the field and in 1912 the Northern Assurance Company commenced underwriting livestock in Australia. A year later, the latter company commenced operations in the livestock field in the home country. In 1912, steps were taken to establish a tariff association for livestock insurance, and on December 20 of that year, a preliminary meeting was held in the Commercial Union Offices of London. Representatives of the following offices were present: Commercial Union; Norwich & London; London and Lincolnshire; Royal; Imperial Livestock; Horse, Carriage & General; and Yorkshire. The latter company had prepared a draft tariff as a basis of discussion by the meeting. The existence of this association had a wholesome effect upon underwriting practices. The association has branched forth until recently it had a membership of over 30 offices. It is now known as the "Live Stock Offices Association," H. E. Howlett, Secretary, 14 Old Park Avenue, London, S. W. 12, England.

HORSE ENDOWMENT INSURANCE IN SCOTLAND

In Scotland, a unique form of cover is offered by the General Accident, Fire & Life Assurance Corporation of Perth. This is the horse endowment insurance plan first put forth by that company in 1910. According to information from Mr. Frederick Richardson, the General is the only company which offers this branch of insurance. This type of insurance is designed to meet the requirements of horse owners who desire a full specified sum at the end of a given number of years if a horse is then living, combined with a general death cover throughout the period of insurance. The owner may secure an amount of insurance ranging from £20 to £50 for a term of from 5 to 10 years. At the end of the endowment period, the sum assured is paid to the owner, or on prior death of the animal at any time. This is really horse replacement insurance.

There are provisions in the policy for liberal cash surrender values after payment of 2 years' premiums and for the issue of a

paid-up policy in the proportion which the number of premiums actually paid bears to the total number payable under the original policy. The exception as to paid up policies is that the death benefit does not continue unless the reduced premiums applicable thereto are paid. There is also provision for loans on the policies after payment of two or more premiums. The owner can obtain an advance up to nine-tenths of the surrender value, paying interest at 5 per cent. per annum.

In event of the sale of the insured horse, or its disposition otherwise, the owner may have the policy altered so as to apply to another horse, immediately transfer the policy to the purchaser, or immediately surrender the policy for its cash value. Extra premiums are charged for endowments on race horses or on horses used for heavy haulage.

Risks from foaling, hunting, fire and castration are charged for at extra premiums according to age and season. Stallions, polo ponies and yeomanry horses are charged 1 per cent. extra on the amount insured. The plan applies only to horses not more than 8 years of age at entry or which will not exceed 16 years of age at the expiry of the policy. The General Accident, Fire and Life also issues policies insuring livestock in transit by sea and from any part of the world. In form this reverts to the Spanish marine cover on animals offered in 1556. The policy covers death from natural causes, accident or injury, jettison or washing overboard. Protection is also offered to owners of large studs and herds for excessive mortality due to epidemics.

There is not much historical information available on livestock insurance in Scotland. In 1872, the Scottish Farmers Livestock Insurance Company was formed. A scheme of mutual cattle insurance was under agitation in 1873, but nothing in general came out of the discussion. In 1899, the Scottish Livestock Insurance Company, Ltd., was founded at Perth, Scotland. In the 80's of the last century, the London and Provincial and the Horse Insurance Company commenced operating in the north of Scotland. They ultimately opened their first branch at Old Meldrum, and a year or two later offices were opened in Edinburgh and Moffat.

In Scotland, special policies are sometimes issued against "grass disease", an ailment to which horses and mares are subject in that country. Slaughter insurance against loss through tuberculosis is also offered.

(j) *France.*

In 1839 the Campagnie des Pyrénées was founded for the transaction of animal insurance in the Hautes Pyrénées. This is the first association of record for this class of insurance in France. About 1848, a plan was brought forward in France for Government insurance, including cattle insurance. It was proposed, at that time, to charge a uniform premium of $1\frac{1}{2}$ per cent. upon the estimated salable value of all livestock. The vigorous opposition of the existing French insurance offices, at that time, repelled this attack. In 1857, a scheme was propounded for a General Bank for Agricultural Insurance in France. A branch was to be devoted to the insurance of cattle. An elaborate scheme of risk classes was proposed. A premium of 1 per cent. was set for Class I, which was to include ordinary animals on the farm; Class II comprised pigs, and here the premium was projected at 1 per cent; Class III was set up for sheep and lambs; Class IV for horses in police and military service; Class V for draft animals, stallions, bulls and rams, and Class VI for animals used in public delivery service, or for cows kept in towns and cities. The rates for Class III were proposed at 2 per cent; for Class IV at $1\frac{1}{2}$ per cent; Class V at $2\frac{1}{2}$ per cent and Class VI at 3 per cent. In setting these rates it was thought that not only should the type of animal and nature of work performed by these animals be taken into account, but also the conditions of nourishment, care and shelter under which they lived.

In 1859, an attempt was made again to organize a system of agricultural insurance against cattle diseases, frost, floods and hailstorms. This plan was to be under the control of the State, and participation in it was to be made compulsory. A full discussion of the plan is given by M. Le Hir in the *Assurance Magazine*, Volume VIII, Page 286.

In 1877, M. Benion issued his manual on the insurance of livestock. This writer thought that livestock insurance could best be conducted in France by small, local mutual societies. He warned against the danger of frauds, which would occur under country-wide State or private insurance. Some account of Benion's work is given in the *Insurance Times* for December, 1877, page 768. Two other writers in France, at about the same time, Magne and Valserres, agreed with Benion in respect to the types of insurance carriers best suited to carry on the business

among the French peasantry. Up to 1876 the following companies had been organized in France: Compagnie des Pyrénées (stock), 1839; L'Agriculture (1840); Agricole de Lambres (1841); a company at Laval (1842); La Ligerienne Tourangelles (1843); La Poles (1843); La Bucephales (1844); La Mutuelle du Calvados (1844); La Bonne Foi (1845); L'Agricole (1846); La Garantie Federale (1846); Tresor de l'Agriculture (1846); La Societe des Cultivateurs (1855); Mortalite de l' espece chevaline (1867); L'Union Nationale (1872); La Gironde (1872); La Patrie Agricole (1875); La Comptoir Agricole (1876); and the following, date unknown, La Glaneuse, La Securite, Le Betail, and La Gaule.

LA MUTUELLE AGRICOLE

In 1878 "La Mutuelle Agricole" was formed. The company proposed to operate on the basis of fixed assessments, at 2 francs annually per head, upon domestic animals of any or every kind or value. Carriage, hack and dray horses were excepted, and here the assessment was to be 10 francs per head annually. It was objected, at that time, however, that the insurance was too cheap and that this mutual society could not hold to its announced position. The lack of classification of the animals, according to risk class and also according to locality, was held to be an unfortunate oversight. The provision that if assessments failed to meet the amount of losses, indemnity due each claimant be reduced in proportion, was held hardly to be a sufficient safeguard.

This society was organized by M. de la Porte. Local agents were to have been paid commissions of 5 per cent. and the directors of the society in the several *departements* were to receive 3 per cent. upon all premiums coming from their several areas. One objectionable feature in the organization of this society was that the general director was to receive as a fee the sum of 3 per cent. upon all amounts paid into the treasury of the society besides perquisites as follows: upon the appointment of departmental directors, they were to pay the sum of 1,200 francs, and each local agent the sum of 300 francs, half of which sums respectively was to belong to the founder and director as a remuneration for his trouble, care and contribution to the formation of the society. The remaining half of these payments were to be held as security for the several other officers and to be invested according to law for their benefit, the interest being subject to their order at the rate of 3 per cent. per annum. It

was also provided that in the event of the director-general leaving his position from any cause whatever, he or his heirs after him, were to continue to receive one-half of the fees that he would have been entitled to himself. One American writer in the 70's wanted to know what was "Mutuelle" about this society!

In 1879 another plan was brought forward for government insurance in France covering fire, hail, frost and livestock insurance.

The status of animal insurance in France in the early 90's of the last century is shown in the following table:

TABLE 10
ANIMAL INSURANCE COMPANIES IN FRANCE, 1894

Company	New Insurances (Francs)	Claims Paid (Francs)
L'Avenir, Paris.....	9,671,978	300,370
L'Association Agricole, La Rochelle...	338,317	4,019
Le Retail, Paris.....	1,073,159	11,889
Le Bon Laboureur, Dreux.....	1,294,085	43,685
La Bonne Foi, Paris.....	256,843	4,051
La Caisse des Proprietaires, Paris.....	300,000	20,000
L'Etable, Paris.....	2,175,972	23,499
La Garantie Federale, Paris.....	20,878,715	401,862
La Glaneuse Agricole, Paris.....	300,000	5,340
La Societe des Cultivateur Coulommiers	1,250,450	42,506
L'Union Centrale, Bordeaux.....	1,294,210	11,509
Totals—1894.....	38,833,729	868,724
1893.....	36,843,974	904,805
1892.....	36,469,292	838,552
1891.....	38,759,357	830,743
1890.....	38,386,380	819,557

One company, the *Securite de l'Aisne Loan*, went into liquidation in 1893. The loss ratio in per cent. of amount insured for the years 1890 to 1897 for 11 mutual livestock insurance offices in France is given in the following table:

TABLE 11
LOSS RATIO, PER CENT. OF INSURANCE AMOUNTS, ELEVEN
MUTUAL LIVE STOCK OFFICES IN FRANCE, 1890 TO 1897

Year	Loss ratio
1890	2.13%
1891	2.14
1892	2.29
1893	2.45
1894	2.24
1895	2.16
1896	2.25
1897	2.47

In general, these mutual companies in France during this period used a 4/5 value clause as a check on moral hazard. The total amounts insured in 1897, in these 11 mutual companies,

TABLE 12
COMBINED EXPERIENCE OF FRENCH LIVE STOCK INSURANCE COMPANIES, 1890 TO 1907

Year	Number of Policies	Amount issued in francs	Premium income in francs	Losses (Number)	Losses in francs	Reserve at end of each year in francs
1890	20,953	38,386,387	1,197,750	2,971	819,557	198,765
1891	20,486	38,759,357	1,293,330	3,106	810,743	214,770
1892	20,806	36,469,292	1,245,078	2,995	838,552	218,000
1893	21,062	36,843,974	1,305,061	3,282	904,805	220,588
1894	19,442	38,833,729	1,290,990	2,892	868,724	232,577
Average: 1890—1894	20,580	37,858,548	1,266,442	3,049	852,476	216,940
1895	18,787	37,010,695	1,259,413	2,508	804,204	242,237
1896	21,499	40,585,135	1,402,804	3,001	914,178	265,218
1897	23,568	43,787,385	1,348,555	3,480	1,086,474	298,244
1898	26,097	43,311,190	1,564,758	3,882	1,280,446	323,204
1899	28,033	51,371,273	1,658,412	3,986	1,392,252	323,939
Average: 1895—1899	23,597	44,413,136	1,446,788	3,371	1,095,511	290,568
1900	30,240	51,544,472	1,761,955	3,884	1,433,309	324,094
1901	34,945	65,447,355	2,224,308	4,336	1,818,792	333,935
1902	32,378	66,691,868	2,327,538	4,029	1,857,095	372,081
1903	39,040	68,774,900	2,398,272	4,219	1,901,368	387,555
1904	40,060	71,913,841	2,560,975	4,591	2,112,309	365,460
Average: 1900—1904	35,333	64,874,487	2,254,610	4,212	1,824,575	356,625
1905	42,430	76,772,422	2,690,804	4,991	2,264,847	347,257
1906	44,494	84,613,478	2,918,776	5,866	2,537,040	335,246
1907	45,428	88,343,988	3,052,694	5,684	2,565,739	583,226

was about \$8,529,000. The combined experience of the French companies from 1890 to 1907 is shown in the table on page 331.

It is stated that in Metz, there is a separate organization for insuring animals against loss through rejection by food inspectors. The premiums annually are: for bulls and oxen, 75 cents; cows, \$1; calves, 50 cents; and swine, 30 cents. The indemnity paid for the full value of the animal condemned, or the value of the part confiscated, included all expenses incurred. The receipts of the company in 1927 were \$5,000.

(k) *Germany.*

We have referred to the existence of mutual cattle insurance societies in the north of Europe. They are of great antiquity in Germany. In addition to the activities of these local societies, it is fairly clear that the business of cattle insurance was transacted in the north of Europe early in the eighteenth century. Under a policy in Hamburg, Germany, in 1720, individual underwriters undertook to cover the "risks of all distempers and sickness in cattle and of robbery, and other accidents, either to be imagined or not which might happen to the cattle insured." The policy, although issued in Hamburg, Germany, was nevertheless subject to the uses and customs of Antwerp, where, no doubt the insurance of cattle by individual underwriters had been practiced at a much earlier period.

In 1753, Nicholas Magens in his "Essay on Insurances" says: "when infectious distemper reigns, cattle grazers or cow keepers, whose capital is chiefly employed therein, are permitted to insure the lives of their stock before the sickness has appeared among them." Magens reviewed the Hamburg policy just mentioned.

ERNST ALBERT MASIUS

Cattle insurance by commercial companies seems to have been introduced in Germany by the late Ernst Albert Masius in 1830. Masius was one of the pioneer insurance journalists of Germany. It is known that he was the founder of not less than three life insurance companies, two fire insurance companies, two hail insurance companies and two cattle insurance institutions. He was also a pioneer in founding accident insurance for railway passengers and in mortgage guarantee insurance. His works on insurance are still standard reference texts in Germany. Masius' writings should be better known in this country.

Masius submitted to the Convention of Actuaries, held in London in 1851, a statement on cattle insurance in Germany as observed by him since 1830. He said that commercial cattle insurance was the one branch of the insurance business in Germany which had prospered least; the expense of management was excessive; that it required supervision and control which could not be kept up by commercial companies. No live stock insurance company in Germany, founded between 1830 and 1850, was able to survive the tenth year of existence. In 1851, there were in Germany only two societies on the mutual plan, one of them established since 1846 at Darmstadt and the other in 1848 at Cologne (Cologne and Münster Cattle Insurance Union). On various occasions they very narrowly escaped liquidation. Their general experience, at that time, indicated a premium of about 4 per cent of value insured.

In general, the years 1849 and 1850, marked the foundation of modern commercial live stock insurance in Germany. Ehrlich, in his work on animal insurance in Germany and its historical development, has noted the formation of at least 35 large animal insurance companies in Germany during the latter part of the nineteenth century. Most of them, he says, went into liquidation after only a short period of existence. Some of the more important private companies now writing live stock insurance in Germany are as follows: Allgemeine Deutsche Viehversicherungs, Berlin, founded in 1892; Altenburger Viehversicherungs, Altenburg i. Thur, founded in 1889; Badische Pferdeversicherungs, Karlsruhe, founded in 1879; Braunschweigische Allgemeine Viehversicherungs, Braunschweig, founded in 1852; Erfurter Viehversicherungs, Erfurt, established in 1866; Halensia, Godesberg a. Rhine, founded in 1888; Hamburg-Altonaer Viehversicherungs, Hamburg, founded in 1897; Pfälzischer Viehversicherungs, Ludwigshafen a. Rhine, established in 1849; Rheinische Pferde und Viehversicherungs, Cologne, established in 1875; Sächsische Viehversicherungs, Dresden, founded in 1872; Süd-deutschland, München, founded in 1921; Uelzener Viehversicherungs, Uelzen, established in 1873; Vaterlandische Viehversicherungs, Dresden, organized in 1887; Veritas, Pferde-und Viehversicherungs, Berlin, inaugurated in 1863; Vieh-Versicherungs Gesellschaft, Schwerin, i. M., organized in 1892; Bayrische Landes-Tierversicherungsanstalt, München, founded in 1896 and

Thüringische Landesanst. für Viehversicherungs, Jena, established in 1919. In 1926 the German stock companies insured 257,000 animals, and the mutual companies 660,000 animals. The combined premium income in 1926 was R. M. 14,897,000 and payments for losses were R. M. 10,583,000.

The premium income and the loss experience for the private livestock insurance companies in Germany, for the period 1908 to 1916, are shown in the following table.

TABLE 13
LOSS EXPERIENCE
German Private Livestock Insurance Companies. 1908-1916

Year	Total premiums (M)	Total losses (M)	Excess (+) or deficiency (-) of premiums over losses (M)	Per cent. losses of premiums
1916	13,109,852	10,262,209	+2,847,643	78
1915	11,551,965	10,811,154	+ 740,811	94
1914	12,513,904	12,699,737	- 185,833	101
1913	13,429,274	14,423,709	- 994,435	107
1912	13,359,949	14,557,648	-1,197,699	109
1911	13,267,539	14,534,176	-1,266,637	110
1910	11,361,797	11,963,365	- 601,568	105
1909	11,177,437	11,780,278	- 602,841	105
1908	10,696,969	11,038,674	- 341,705	103

A suggestion of the extent to which reinsurance is practiced among German private livestock insurance companies in Germany is afforded by the following table.

TABLE 14
PREMIUMS FOR OWN ACCOUNT AND ON REINSURANCE.
LIVESTOCK INSURANCE IN GERMANY. 1912 TO 1916.
German Private Livestock Insurance Companies

Year	Premiums for own account (Marks)	Reinsurance premiums (Marks)
1916	12,277,693	1,344,890
1915	11,742,598	675,569
1914	12,712,370	405,919
1913	13,360,006	426,212
1912	13,230,832	453,623

MUTUAL CATTLE INSURANCE SOCIETIES IN GERMANY

The number of mutual cattle insurance societies in this country always has been very great. Some 6,000 were known to exist in recent years. In 1883, there were known to be 4,021 such clubs with 399,400 members, insuring more than 1,025,000 animals in Prussia alone. There were possibly 2,000 such societies in

Bavaria; 910 in Wurtemberg; 1,024 in Baden; 300 in Hesse and 171 in Alsace-Lorraine, prior to the war. The majority of them were small local organizations with no written articles of association, and have been known to dissolve easily when losses were too heavy. Their existence is definitely traceable back to the sixteenth century. Occasionally these societies extend their business over several communes, receiving from the district authority regular or occasional subventions in money and being administered sometimes by the district authority.

Under the Imperial Insurance Act of 1901, only associations with written statutes or articles, and with written insurance conditions, were obliged to require authority to carry on their business and to publish their accounts. Insurance enterprises are, moreover, subject to the Supervisory Office for Private Insurance in Berlin, only when they carry on their business beyond the limits of the Federal State in which their registered office lies. There were in 1910 only 27 such societies subject to the Supervisory Office for Private Insurance in Berlin. Most of the societies are stated to require an advance premium from the insured, and reserve the right to levy a supplementary premium. Two societies in Saxony were, however, stated to require fixed premiums. Small and medium cattle owners do not insure to any noteworthy extent with these societies who charge high premiums and whose conditions have been framed largely to suit the requirements of large owners.

Cattle insurance is far more highly developed in Southern Germany than elsewhere, and this is mainly due to the measures adopted by certain States, namely Baden and Bavaria. Slaughter insurance, however, has been in force in Saxony as compulsory State-aided insurance since 1900. It was estimated that in Germany, in 1910, about 9 per cent. of the total value of horses and donkeys in the country were insured; 8 per cent. of the cattle and 3 per cent. of the pigs.

The following notes on mutual cattle insurance practices in several Federal States of Germany may be of some interest. Much of this material was found in the works of Cahill, Luck and Ehrlich. (*See bibliography.*)

Prussia.

Several Chambers of Agriculture in Prussia have adopted, in past times, special measures to promote the organization of

mutual cattle insurance. The Prussia-Saxony Chamber introduced some years ago a system of reinsurance for the local associations scattered throughout the province. A number of these associations were formed into a Union and all with excess of receipts over expenditures pay the balance to the Union for the purpose of covering losses of those associations in contrary condition.

It was proposed about 1913 in East Prussia, by the Chamber of Agriculture, to form an administering union of the 600 to 800 mutual cattle clubs in that area. The Union was to retain 60 per cent. of the premiums, together with 1 per cent. for cost of administration. The province was to make a grant to the Union, and the Chamber of Agriculture besides undertaking the administration of the Union business, was to make a grant equal to half of that granted by the province. In Pomerania, the Chamber of Agriculture formed a Union of about 27 local clubs in 1911. No reinsurance facilities were furnished but the Union would afford advice in the management of the clubs or societies.

Bavaria.

A Cattle Insurance Association was formed at Pfalz in Bavaria about 1848. Its function was to insure horses, cattle, sheep, goats and swine. The experience of this society is given in the *Assurance Magazine*, Volume 1, Page 349.

Government encouragement to insurance has made remarkable progress in Bavaria since 1873 or 1874. The centralizing and modernizing of insurance against fire by the Government, in 1874, was followed in 1884 by an insurance provision against hail damage. The State officials and farmers in that State considered this a most unique institution. In 1896, the Bavarian State undertook the organization of cattle life and slaughter insurance. In that year, under the leadership of Dr. Baron von Feilitzsch, the Public Cattle Insurance Institution was established along the following lines:

1. The institution was to be a mutual undertaking with the management entrusted to the Royal Chamber of Insurance.
2. It was to be formed of the local mutual cattle insurance societies throughout Bavaria which adopted the model articles of association approved by the institution and which voluntarily attached themselves to the latter.
3. Only the insurance of cattle and goats was to be undertaken.
4. The institution was to take over the payment of half the

losses, the funds to be collected from the affiliated societies in proportion to the values insured by them.

5. An annual State grant was to be made to cover partially the annual expenditures, in addition to a foundation grant to be made to the reserve fund of the institution. In general, these local societies, affiliated with the State institution, insured cattle owned by members.

There was an age limitation in respect to cattle insured. Only animals more than 3 months and not more than 12 years old were to be covered. Diseased animals could be refused as well as those obviously badly fed or overworked.

The experience of the Bavarian State Cattle Insurance Institution, from 1897 to 1911, is shown in the following table.

TABLE 15
BAVARIAN STATE CATTLE INSURANCE INSTITUTION,
1897-1911

Year	Number of Societies	Members-ship	Number of animals insured	Insured value £	Number of compensation cases	Percent- age of cases to number of animals insured	Percent- age of total net pay-ments to insured value
1897	814	39,201	194,402	1,974,908	4,614	2.3	1.2
1898	1,008	50,523	238,774	2,478,077	6,336	2.6	1.2
1899	1,270	62,967	285,138	2,995,280	7,804	2.7	1.3
1900	1,500	72,705	326,570	3,415,426	9,420	2.9	1.4
1901	1,551	74,020	326,214	3,402,020	10,080	3.1	1.5
1902	1,552	74,829	307,760	3,326,221	9,855	3.2	1.4
1903	1,537	74,673	292,545	3,360,881	8,879	3.0	1.4
1904	1,530	75,945	297,855	3,508,233	9,205	3.1	1.5
1905	1,553	78,142	307,751	3,739,745	10,407	3.4	1.6
1906	1,572	79,113	305,769	4,006,275	10,502	3.4	1.5
1907	1,614	81,552	320,776	4,274,478	10,330	3.2	1.6
1908	1,646	83,982	332,432	4,337,089	12,082	3.6	1.8
1909	1,689	85,117	329,774	4,271,334	12,550	3.8	1.9
1910	1,692	83,062	306,851	4,221,812	12,292	4.0	1.8
1911	1,661	80,734	294,246	4,190,697	12,888	4.38	1.9

BAVARIA HORSE INSURANCE INSTITUTION, 1899

Due to the further activity of Dr. von Feilitzsch, Minister of the Interior, the Horse Insurance Law of September 28, 1899, was passed, establishing the Horse Insurance Institution. This institution meets half of the compensation due to insured horse owners; it pays, however, all claims in full, and recovers from the societies concerned at the end of the insurance year. The societies are subject to inspection by the institution, which may

examine all books and documents, and may exclude societies conducting improper practices from the institution. The local horse insurance societies may cover areas similar to those of the local cattle insurance societies. All horse owners within the areas covered are eligible for membership, except professional horse dealers, horse slaughterers and those who already have horse insurance. No horses are taken under 8 months of age or over 15 years of age, nor does the institution insure badly nourished or misused horses, or horses which have been pledged as security for debt.

There is a waiting period of 14 days before animals are in benefit. Claims are not paid when death of the animal is caused by war, riot, fire or lightning or when the animal dies by infectious disease, where State indemnity is paid in such cases. Nor is there any basis for claim when the animal dies through neglect or mishandling by the owner, or when the owner fails to give prompt notice of sickness or injury of the animal. The injury or death of an animal, while engaged in a race upon which money is wagered, is also a ground for rejecting the claim.

The institution has a series of graded risk classes, the experience of which is shown in the following table.

TABLE 16
LOSS EXPERIENCE ON HORSES
BAVARIAN HORSE INSURANCE INSTITUTION, 1900—1905

Insurance year	Per cent. Lost of Insured Horses, by Risk Class:				
	Without increased rate	With 20% increase	With 30% increase	With 50% increase	With 80% increase
1900—1901	2.63	2.82	3.50	5.14	4.73
1901—1902	3.22	3.87	4.49	6.05	8.15
1902—1903	3.67	4.24	4.34	5.22	9.29
1903—1904	3.78	4.19	5.92	5.63	10.88
1904—1905	3.89	5.32	5.77	7.55	10.98

AGGREGATE EXPERIENCE, 1900—1905

Risk Class	Per cent. Lost of Insured Horses
I	3.45
II	4.08
III	4.80
IV	5.91
V	8.80

A review of the experience for the years 1901 to 1911 is shown on page 339.

TABLE 17
 BAVARIAN STATE HORSE INSURANCE INSTITUTION, 1901—1911

Year	Number of Societies	Number of members	Number of horses insured	Insured value £	Number of compensation claims paid	Percentage of claims to number of animals	Compensation paid £	Percentage of compensation to insured value
1901	296	12,254	32,635	930,118	926	2.8	17,195	1.8
1902	363	18,773	47,673	1,382,304	1,723	3.6	30,469	2.2
1903	401	24,366	60,021	1,771,632	2,390	4.0	43,752	2.5
1904	414	27,759	66,028	1,974,365	2,773	4.2	51,960	2.6
1905	428	29,010	70,016	2,133,592	3,101	4.4	58,183	2.7
1906	436	30,139	71,612	2,249,909	3,378	4.7	64,511	2.9
1907	450	31,406	73,541	2,396,587	3,742	5.1	72,518	3.0
1908	462	33,243	77,294	2,591,435	3,796	4.9	74,792	2.9
1909	477	34,991	80,811	2,772,004	4,148	5.1	83,572	3.0
1910	480	37,574	84,753	2,999,823	4,717	5.6	97,009	3.2
1911	487	39,017	89,068	3,275,403	5,426	6.0	115,057	3.5

It has been said in respect to these Bavarian institutions that they eschew all bureaucratic tendencies and that the State and township officials have been largely friendly counsellors to the parties interested. The Horse Insurance Institution was not especially established for the benefit of the farmers, but extended its protection to all regions in Bavaria, where horses are bred, and this included the cities.

Baden.

The first trace of cattle insurance in Baden is found in the 30's of the last century. In 1834, the directors of the Agricultural Economics Society of Baden endeavored to combat usury in the Grand Duchy when cattle were offered as pledges. The Society encouraged the formation of cattle clubs which lent money to prospective purchasers of cattle. An insurance arrangement was effected to protect the societies on their loans to members. In 1846, there were 60 such societies in the Grand Duchy. During the last half of the nineteenth century in Baden, the activities of these societies brought nearer and nearer the organization of cattle insurance companies. Out of this experience arose the first plan for compulsory animal insurance. Nothing came out of the plan, however.

The development of local voluntary insurance institutions was rapid, and in 1890 had gone so far that 25 per cent. of the cattle in Baden were covered by live stock insurance in mutual societies. The following table gives the experience of the mutual horse and cattle insurance societies in Baden from 1883 to 1892. The figures are taken from the reports of the district veterinary of Baden.

Baden was the first of the German States to undertake the organization of cattle insurance in modern times. Under the Act of 1890, as finally amended in 1910, every parish authority was obliged to establish under the Ministry, a Mutual Cattle Insurance Institution, when the cattle owners of the district by two-thirds vote, decided in favor of the proposition. All cattle owners within the area of the parish authority were then obliged to insure their stock. These institutions formed a Central Union, which, under powers slightly amended by the Cattle Insurance Act of 1898, undertook responsibility to pay half of the claims due to members. The local insurance societies, existing

TABLE 18
HORSE AND CATTLE INSURANCE IN BADEN, 1883—1892

Year	Horse Insurance						Cattle Insurance					
	Societies	Insured members	Insured horses	Loss		Per cent. insured of all horses	Societies	Insured members	Insured cattle	Loss		Per cent. insured of all cattle
				Number	Marks					Number	Marks	
1883	10	525	1,127	39	12,215	1.76	353	38,858	88,747	1,450	197,741	14.6
1884	10	582	1,188	46	12,243	1.84	370	35,139	?	1,553	204,140	?
1885	12	669	1,353	42	10,399	2.10	396	38,065	105,227	1,977	223,162	16.7
1886	14	825	1,728	71	20,024	2.66	448	41,899	122,518	2,060	259,222	19.1
1887	14	687	1,720	62	20,302	3.72	482	45,620	136,066	2,193	291,864	22.6
1888	14	700	1,790	80	23,086	2.77	479	45,993	139,593	2,551	315,604	24.4
1889	14	710	1,776	85	15,954	2.76	497	47,849	139,202	2,391	317,890	25.0
1890	19	729	1,982	57	18,056	3.08	500	47,397	139,982	2,105	315,148	24.5
1891	24	1,003	2,169	67	19,639	3.38	521	50,316	154,118	2,442	397,399	25.9
1892	18	962	2,051	64	19,320	3.20	549	54,468	168,882	3,242	473,587	28.5

TABLE 19
THE BADEN CATTLE INSURANCE UNION, 1893-1911

Year	Number of Local Organizations	Number of Cattle Owners	Number of Cattle	Insured Value £	Number of Compensation Claims		Percentage of compensation Cases to No. of animals insured	Compensation paid £	Net Returns from Sale of Cattle £	Expenditure Covered		
					Recognized	Rejected				By Levy by Local Organizations £	By Union £	By State Grant £
1893	87	9,396	29,231	310,120	846	17	2.84	7,695	2,176	2,322	1,240	2,100
1894	111	11,642	37,449	497,051	1,101	26	2.87	11,207	3,893	3,756	3,485	2,000
1895	118	12,466	43,174	618,798	988	26	2.29	12,071	4,126	4,421	3,712	2,150
1896	118	12,544	44,407	598,909	1,224	20	2.76	14,072	4,344	4,597	5,450	1,750
1897	123	12,803	44,827	600,137	1,411	14	3.15	15,276	4,786	7,395	1,200	4,000
1898	124	12,749	45,142	625,076	1,276	24	2.82	13,837	4,719	7,107	1,250	3,300
1899	125	17,238	62,832	934,946	1,506	37	2.40	17,718	6,777	8,820	1,869	3,750
1900	202	18,948	67,297	999,802	1,809	17	2.69	21,128	8,511	9,806	1,999	4,600
1901	236	22,254	74,877	1,135,860	2,156	20	2.88	25,145	10,320	11,628	2,271	5,500
1902	258	22,769	80,523	1,284,682	1,994	13	2.48	24,218	10,344	11,544	2,569	4,810
1903	281	24,868	91,584	1,497,278	2,083	38	2.27	26,902	11,654	12,568	2,994	5,050
1904	321	27,599	107,811	1,793,281	2,499	36	2.32	34,171	14,616	16,556	3,586	6,700
1905	341	29,758	118,282	2,052,450	2,903	30	2.45	40,004	17,556	18,561	4,104	7,800
1906	363	31,336	123,396	2,243,781	3,144	33	2.54	44,389	19,139	20,393	4,485	8,640
1907	380	33,183	132,591	2,531,340	3,440	32	2.59	51,906	21,857	23,985	5,062	10,375
1908	400	34,528	139,605	2,638,659	3,731	50	2.67	55,745	21,915	26,319	5,277	11,870
1909	417	36,370	144,477	2,742,423	3,998	40	2.76	59,414	24,368	27,779	5,484	12,340
1910	426	36,950	143,570	2,841,739	3,915	61	2.72	60,522	25,364	28,769	5,683	11,915
1911	436	37,934	148,045	3,142,193	4,565	57	3.08	75,472	30,215	34,514	6,284	16,105

prior to January 1, 1891, with satisfactory articles of agreement, were eligible for affiliation with the Cattle Insurance Union.

The amount of compensation was fixed at seven-tenths of the value of the animals, value being based on current market prices. Compensation to the extent of eight-tenths of market value was paid in event of compulsory slaughter. Compensation was also paid in respect to animals discovered to be unsound after slaughter for food or industrial purposes. To meet these additional benefits, the union levied contributions upon the member societies, but when such contributions threatened to be burdensome, the balance was made good by the State Treasury.

A grant of some \$50,000 was made to the Union by the State for the purpose of forming a reserve fund. The State bore the expense of the administration of the Union. It appointed the Committee of Management which exercises supervision over the business. Certain courtesies were granted to the institution, such as freedom from all court fees and other payments to the State in connection with the conduct of the business. Free postage was also granted. The Union paid directly to the insured owners the full amounts due and recovered later from the local institutions. Powers of audit and supervision were invested in the Union. The insured were represented by a permanent committee elected from the members of the local institutions. The statistics of the Baden Cattle Insurance Union for the years 1893 to 1911 are shown on page 342.

In addition to the State scheme, there were numerous private cattle insurance undertakings, all of them subject, however, to supervision by the Baden Ministry of Internal Affairs. The facts for the period 1894 to 1910 for these institutions are shown on page 344.

Württemberg.

The question of cattle insurance in Württemberg has been brought up quite often during the past century. In 1880, there were in this area about 330 local voluntary societies, and in the period 1888 to 1892, there was an average of 475. In this latter period, the societies covered about 45,000 members insuring 1,700 horses and 155,000 cattle. In 1900, State systems were authorized, since which time, there has been a marked growth in the number of local societies. These societies were established largely through direct grants by the State.

TABLE 20
CATTLE INSURANCE UNDERTAKINGS IN BADEN, 1894 TO 1910

Year	Under- takings	Number of Cattle owners	Number of animals insured	Number	Percentage of animals insured	Amount of compensa- tion paid £
1894	534	51,521	151,468	2,821	1.76	29,302
1895	563	54,540	170,372	2,665	1.56	28,290
1896	572	57,009	185,950	3,282	1.76	32,424
1897	589	58,736	195,083	3,571	1.83	35,624
1898	583	59,910	196,678	3,135	1.59	32,820
1899	566	58,029	193,589	3,286	1.69	34,074
1900	565	57,571	190,065	3,426	1.80	33,269
1901	544	56,665	185,823	3,371	1.81	34,287
1902	552	56,764	185,851	3,205	1.67	33,436
1903	547	56,495	189,654	3,115	1.64	35,391
1904	557	57,496	198,089	3,529	1.78	43,981
1905	538	56,426	196,599	3,680	1.87	38,246
1906	522	54,255	188,661	3,506	1.86	40,627
1907	536	55,930	192,659	3,741	1.94	44,246
1908	529	54,328	191,829	4,018	2.09	46,879
1909	527	53,519	186,441	4,111	2.15	48,129
1910	529	53,273	184,792	3,997	2.16	49,872

The Würtemberg Diet rejected in 1900 the proposal to establish an insurance organization upon the Bavarian model. As recently as 1908, there were 910 local insurance societies in this area and they insured cattle largely. There was also some insurance on horses, goats and pigs. The great majority of the Würtemberg societies do not insure against losses arising from the condemnation of meat or hides after slaughter of the animals. Only 30 of the 172 societies in 1908 included slaughter insurance within their scope.

Grand Duchy of Hesse.

In Hesse, local societies on the mutual voluntary principle have existed since 1840. Attempts were made to found a State Cattle Insurance Institution on the Bavarian model, but these did not succeed. The most recent information suggests that there were in Hesse about 300 local insurance societies receiving State grants.

Saxony.

In accordance with the Saxon Act of 1898, obligatory insurance for cattle against loss through the total or partial rejection of the carcass after slaughter has been in force since 1900. All cattle and pigs over 3 months of age which were slaughtered in Saxony

were subject to insurance. Compensation to the amount of 80 per cent. of the value is paid and the State undertook one-quarter of the payment. The administration of cattle insurance is entrusted to the Fire Insurance Chamber.

About 1908, a new system of horse insurance was about to be introduced in Saxony. The existing livestock insurance companies were not patronized by farmers to the same degree as were other lines of insurance. The farmers were not pleased with the high premiums demanded. The State authorities, however, worked out a plan which was sanctioned by the Saxon Government, and the plan was to apply to the insurance of horses. It was understood that all horses and cross-breeds over 6 months of age were to be insured. Five risk classes were established at premiums ranging from $1\frac{1}{2}$ per cent. to 5 per cent. It was proposed to value animals by special committee and to issue public summons to persons in the various districts in order to facilitate the development of small insurance societies which later were to be affiliated with larger organizations through Government mediation and supervision.

Silesia.

Up to the end of 1923, in Silesia, cattle insurance was handled chiefly through local societies affiliated with the Silesian provincial cattle insurance societies. In 1923, however, this system was changed. The Lower Silesian Provincial Fire Society established a special cattle insurance section on the fixed premium system and took over the administration of cattle insurance in the State. There had been a rather high and unfavorable loss experience. No facts are available for the more recent arrangements.

The Fire Society or Institution in Breslau, founded in 1742, carries on animal insurance for horses, cattle, pigs, goats, sheep and dogs. It also transacts theft insurance on cattle; and castration, operation, inoculation, transport and show or exhibition insurance. The institution pays up to 80 per cent. of the loss from death or necessary slaughter. The premiums range in general from 3 to 7 per cent. of the sum insured, depending upon the risk class. On January 1, 1928, there were insured on the longer term contracts 27,503 animals for a sum of 12,305,000 marks and for premiums of 417,000 marks. The short term contracts in

1927 insured about 18,000 animals for an amount of more than 10,000,000 marks, with premiums of about 40,000 marks. The losses on this branch of the business averaged 128 per cent. of the income for 1927. Horses, chiefly, are insured.

It was in Silesia that Frederick the Great founded the first governmental cattle insurance institution on the compulsory plan.

(l) *Russia.*

In the Soviet Republic insurance of private property against loss from fire, cattle plague, destruction of crops by hail and loss of goods while in transit on sea or land, was instituted in October, 1921. Insurance was declared to be a State monopoly. In accordance with this arrangement there were insured in Russia during 1927 some 40.4 millions of horned cattle, a considerable increase over the eleven million insured in 1922-1923. The monopoly is administered by the *Gosstrakh*, in Moscow.

(m) *Sweden.*

In Sweden, the insurance of livestock is widespread. In 1911, 46 companies operated throughout the country, and there were 107 provincial and 552 strictly local companies. The total annual premium income amounted to something more than \$1,000,000 and the amounts insured approximately \$60,000,000. Losses averaged annually about \$600,000. The tendency in Sweden was to place insurance in larger commercial companies operating over wide territory, because the small local mutuals seemed to be unable successfully to meet the frequent and violent mortality fluctuations.

The Scandinavian Livestock Insurance Company (Mutual) Stockholm, was referred to in the previous text. That company has published its experience from 1890 to 1925. It showed an average death rate for insured horses of about 2.4 per cent. per annum as compared with a rate of 3.0 per cent. for horse insurance in Denmark. At the present time, livestock insurance in Sweden is being transacted by *Robur öms. Kreatur*, Stockholm, founded in 1904; *Skandinaviska Kreaturs*, Stockholm, established in 1890 and *Svenska öms. Kreatur*, Lilleskog, organized in 1906. In 1925, the Skandinaviska Kreaturs Försäkrings-bologet issued an exceptionally fine brochure describing its experience for the years 1890-1925.

(n) Switzerland.

Switzerland seems to be one of the first countries attempting obligatory cattle insurance. The foundation of the idea was the law of December 22, 1893, which furthered the establishment of slaughter insurance institutions in the various Swiss cantons and political districts. The purpose of the law was to bring cattle insurance societies into existence, to subsidize them and to provide the necessary supervision. In Berne, Basel (rural), Solothurn, Graubünden, Aargau, Tessin, Waadt and Neuenburg facultative-obligatory insurance was established, that is to say, the societies were to be established only on majority vote of cattle owners in the district. In the cantons of Zürich, Glarus, Freiburg, the City of Basel, Schaffhausen and Thurgau, insurance clubs were established compulsorily. In some cases, where the district was too small, several areas were consolidated. Much information on the operation of these Swiss institutions may be found in the statistical communications of the canton of Zürich, 1900. Bee insurance has been transacted quite recently in Switzerland.

There were in Switzerland, in 1922, 2,101 animal insurance societies, insuring 771,264 larger animals and 43,097 smaller animals. They paid 6,666,000 francs on loss for large animals and 107,400 francs in losses on small animals. The Confederation subsidies amounted to 996,300 francs and from the Cantons to 1,399,000 francs.

(o) The United States.

There is little information available on the early history and the specific practices of the associations offering livestock insurance during the nineteenth century in the United States. The record begins in 1828 with the formation of the Northampton County Horse Association at Butztown, Pa. and closes with the establishment of the Guarantee Mutual Live Stock Insurance Company of Chicago, in 1924, with the ensuing liquidation of that Company in 1927.

On pages 348 to 355 will be found a list of the companies and associations reported to have transacted this type of business in the United States. Much further work will have to be done to complete this record. The subject is recommended to graduate students in the economics departments of our universities, and in the insurance departments of university schools of business.

RECORD OF LIVESTOCK INSURANCE INSTITUTIONS IN THE
UNITED STATES, 1828 TO 1925 (INCOMPLETE)

Company	Year founded	Year retired or liquidated	In business 1927	Remarks
Alabama:				
Alabama Mutual L. S. Co. (M), Montgomery.....	?	1909	....	Retired
California:				
California Mutual Live Stock Ins. Co. (M).....	?	1909 or 1910	....	Failed
Colorado:				
Colorado Live Stock Ins. Co. (S), Loveland.....	?	1888	....	Retired
Rocky Mountain L. S. Ins. Co. (S), Denver.....	?	1917	....	Reinsured in Iowa State L. S. Co.
Connecticut:				
Aetna Live Stock Ins. Co. (S), Hartford.....	?	1868	....	Retired
Hartford L. S. Ins. Co. No. 1 (S), Hartford.....	?	1868	....	Retired
Hartford Accident & Indemnity Co. (S), Hartford.....	?	....	Yes	....
First Reinsurance Co. (S), Hartford.....	....	....	Yes	....
Delaware:				
Delaware L. S. Ins. Co. (S), Wilmington.....	1889	?		
District of Columbia:				
Interstate L. S. Ins. Co. of D. C. (S), Parkersburg, W. Va.....	1904	1905	....	Receiver app'td.
Georgia:				
Southern Live Stock Ins. Co. (S), Atlanta.....	1892	1899	....	Retired
National L. S. Ins. Co. (S), Fitzgerald.....	1903	?	?	
Mutual L. S. Ins. Co. (M), Athens	1905	?	?	
Southern Mutual L. S. Ins. Co. (M), Eberton.....	1906	?	?	
Athens Cooperative L. S. Ins. Co. (M), Athens.....	1906	?	?	
American L. S. Ins. Co. (S), Macon.....	?	1905		Retired
Idaho:				
Mutual L. S. Ins. Assn. (M), Boise.....	1905	?	?	
Intermountain Mutual L. I. Assn. (M), Boise.....	1905	?	?	
Illinois:				
Security L. S. Ins. Assn. (M), South Bend.....	1907	?		
Illinois L. S. Ins. Co. (S), Springfield.....	1908	1914	....	Dissolved by court order

RECORD OF LIVESTOCK INSURANCE INSTITUTIONS IN THE
UNITED STATES, 1828 TO 1925—Continued

Company	Year founded	Year retired or liquidated	In business 1927	Remarks
Illinois—Continued				
Kaskaskia L. S. Ins. Co. (S), Shelbyville.....	1913	1924	....	Became life ins. com- pany in 1924
Western L. S. Ins. Co. (S), Peoria	1913	1924	....	Assumed by Kaskas- kia
Granite L. S. Ins. Co. (S), Chicago	1913	1917	....	Reinsured in West- ern L. S., 1917
Central L. S. Ins. Co. (S), Kankakee.....	1914	1925	....	Dissolved
Farmers and Breeders L. S. Ins. Co. (S), Danville.....	1917	1922	....	Reinsured
Midwest L. S. Ins. Co. (S), Quincy	1918	1921	....	Receivership
Metropolitan L. S. Ins. Co., Springfield.....	1920	1922	....	Receivership
American L. S. Ins. Co. (M), Springfield.....	1921	1924	....	Retired
Illinois Bankers Hog Ins. Co. (S), Rockford.....	1922	1924	....	Dissolved
State Mutual Hog Ins. Co. (M), Springfield.....	1919	1921	....	Receivership
Guarantee Mutual L. S. Ins. Co. (M), Chicago.....	1924	1927	....	Receivership
Rock City Mutual L. S. Ins. Co. (M), Rock City.....	?	?		
Indiana:				
Indiana & Ohio L. S. Ins. Co. (S), Crawfordsville.....	1884	1916	....	Reinsured in Hart- ford L. S.
Central Live Stock Ins. Company (S).....	?	1888	....	Retired
Farmers and Breeders L. S. Ins. Co. (S), Indianapolis.....	1893	?	....
Farmers and Citizens Vol. L. S. Ins. Co. (M), Brownsburg.....	1897	?	....
Crawfordsville L. I. Ins. Co. (S), Crawfordsville.....	?	1905	....	{ Absorbed by Indi- ana & Ohio
Live Stock Ins. Assn. (M), South Bend.....	1906	?		
Stockmens Mutual Ins. Co. (M), Indianapolis.....	1907	?	?	
Farmers & Citizens Mutual L. S. Ins. Co. (M), Michigan City...	1907	?	?	
American L. S. Ins. Co. (S), Indianapolis.....	1909	1911	....
Standard L. S. Ins. Co. (S), Indianapolis.....	1909	1922	....	Liquidated
Mutual L. S. Ins. Co. (S), Indianapolis.....	1910	1916	....	Receivership
Home Mutual L. S. Ins. Co. (M), Lafayette.....		1923	Retired
Live Stock Ins. Co., Hunterton...	?	?

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RECORD OF LIVESTOCK INSURANCE INSTITUTIONS IN THE
UNITED STATES, 1828 TO 1925—Continued

Company	Year founded	Year retired or liquidated	In business 1927	Remarks
Iowa:				
Northwestern L. S. Ins. Co. (S), Des Moines.....	1886	1894	....	Retired while still solvent because of "moral hazard" following drop in prices of farm ani- mals, 1892-1893
Northwestern L. S. Ins. Co. (S), Des Moines.....	1907	1915	....	Reinsured in Iowa L. S.
Live Stock Reciprocal Underwrit- ers (M), Sioux City.....	1909	?	....	State L. S. Ins. Co.
Iowa L. S. Ins. Co. (S), Des Moines	....	1920	....	Reinsured
Corn Belt L. S. Ins. Co., Des Moines.....	1919	1921	....
Farmers Mutual Hog Ins. Co. (M), Sioux City.....	1920	1924	....	Retired
Iowa State L. S. Ins. Co. (S), Des Moines.....	1915	1920	....	Failed
National L. S. Ins. Co. (S), Des Moines.....	?	1921	....	Retired
Farmers L. S. Ins. Co. (S), Des Moines.....	1918	1921	....	Receivership
Continental L. S. Ins. Co. (S), Sioux City.....	1920	1921	....	Voluntary liquida- tion
Mutual L. S. Ins. Co. (M), Des Moines.....	1922	1924	....	Receivership
Lowden Mutual Cow Ins. Co. (M), Lowden.....	1922	1922	....
Iowa State Mutual Hog Ins. Co., State Center.....	?	?		
Kansas:				
American Mutual L. S. Ins. Co. (M), Wathena.....	1898	?	....
Capital City L. S. Ins. Co. (S), Topeka.....	1914	1921	....	Failed
Kansas Mutual L. S. Ins. Co. (M), Stockmens Indemnity Ins. Co. (M), Topeka.....	1914	?	....
Topeka Mutual L. S. Ins. Co. (M), Topeka.....	1913	1913	....	Retired
	1913	?	....
Kentucky:				
Kentucky L. S. Ins. Co. (S), Louisville.....	1913	?	....	Reinsured ?
Kentucky L. S. Ins. Co. (S), Louisville.....	....	1912	....	Merged with Ten- nessee Indemnity
Maine:				
Maine L. S. Ins. Co. (S), Portland	1895	1908	....	Retired

DEVELOPMENT AND PRACTICES OF LIVESTOCK INSURANCE 351

RECORD OF LIVESTOCK INSURANCE INSTITUTIONS IN THE UNITED STATES, 1828 TO 1925—Continued

Company	Year founded	Year retired or liquidated	In business 1927	Remarks
Maryland:				
Provident Mutual L. S. Ins. Co., Baltimore.....	1914	?	....
Massachusetts:				
Security L. S. Ins. Co. (M), Boston	1891	?	....
Michigan:				
Michigan L. S. Ins. Co. (S), Detroit.....	1904	1912	....	Receivership
Michigan Mutual L. S. Ins. Co. (M), Saginaw.....	1914	?	....
Minnesota:				
National L. S. Ins. Co. (S), St. Paul.....	1887	1908	....	Retired
American L. S. Ins. Co. (S), St. Paul.....	?	1888	....	Retired
United States L. S. Ins. Co. (S), Fergus Falls.....	1890	?	....
Missouri:				
Stallion & Jack Owners Inter- insurance Alliance, Kansas City	?	1914	....	Liquidated
Montana:				
Montana L. S. Ins. Co. (S), Helena	?	1917	....	Reinsured in Iowa State L. S.
Nebraska:				
Western Horse & Cattle Ins. Co. (S), Omaha.....	?	1890	....	Retired
Nebraska L. S. & Indemnity Co. (S), Omaha.....	1916	1923	....	Became automobile ins. Co.
American L. S. Ins. Co. (S), Omaha.....	1919	1924	....	Reinsured
Swedish Mutual L. S. Co., Axtell.	?	?	....
New Hampshire:				
American L. S. Ins. Co. (S), Manchester.....	1891	?	....
New Jersey:				
Delaware Horse & Mule Mutual Ins. Co. (M), Sergeantville and Trenton.....	1872	1892	....	Receiver appointed
Camden Live Stock Ins. Co. (M), Camden.....	1890	1894	....	Receivership
Newark L. S. Ins. Assn. (M), Newark.....	1896	1897	....	Ceased business
New Jersey L. S. Ins. Co. (S), Newark.....	1911	....	....	Failed to do business
Eastern L. S. Ins. Co. (S), Paterson	1914	....	....	Failed to do business
New York:				
United Retail Grocers Assn. of Bklyn. (Mutual Benefit Horse Fund) (M), Bklyn, N. Y.....	1884	?	

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RECORD OF LIVESTOCK INSURANCE INSTITUTIONS IN THE UNITED STATES, 1828 TO 1925—Continued

Company	Year founded	Year retired or liquidated	In business 1927	Remarks
New York—Continued				
Reserve Fund L. S. Ins. Co. (M), N. Y. C.....	1893	?	....
Mutual Animal Protective Assn. (M), N. Y. C.....	....	1904		Retired
Equitable Horse Ins. Assn. (M), N. Y. C.....		1905	....	Retired
Horse Ins. Assn. of America (M), Bklyn.....	1906	?	....
Buffalo Cooperative L. S. Ins. Co. (M), Buffalo.....	1908	?	....
Chatauqua Cooperative L. S. Ins. Co. (M), Westfield.....	1908	....	Yes	
Empire L. S. Ins. Co. Bklyn.....	1908	?	....
Metropolitan L. S. Ins. Co., N. Y. C.....	1908	?	....
Hudson Horse Ins. Co. (M), N. Y. C.....	1909	?	....
United States Horse Ins. Co. (S), N. Y. C.....	....	1909		Receiver appointed
Hartford L. S. Ins. Co., N. Y. C.	1916	....	Yes	
North Carolina:				
Southern L. S. Ins. Co. (S), High Point.....	1906	1915	....	Reinsured in West- ern L. S.
Coventry Mutual L. S. Ins. Co. (M), Louisburg.....	1906	?	....
Carolina Mutual L. S. Ins. Co. (M), Louisburg.....	1906	?	....
North Dakota:				
North American L. S. Investment Co., Dickinson.....	1892	?	....
Dakota L. S. and Casualty Co., Bismark.....	1913	1915	....	Reinsured in Iowa State L. S.
Ohio:				
Citizens Mutual L. S. Assn. (M), Cincinnati.....	1887	?	....
Aetna L. S. Ins. Co. (S), Cincinnati Farmers & Citizens L. S. Ins. Co. (S), Lima.....	?	1894	....	Retired
Mutual L. S. Protective Assn. of Van Wert County (M).....	1907	?	....
Mutual L. S. Protective Assn. of Paulding County (M).....	1910	?	....
Woodville Mutual Protective L. S. Assn. (M), Woodville.....	19 0	?	....
Ohio Mutual L. S. Ins. Co. (M), Kalida.....	1911	?	....
Southern Ohio Mutual L. S. Ins. Co. (M), Hamilton.....	1911	?	....

RECORD OF LIVESTOCK INSURANCE INSTITUTIONS IN THE
UNITED STATES, 1828 TO 1925—*Continued*

Company	Year founded	Year retired or liquidated	In business 1927	Remarks
Ohio—Continued				
Owners Mutual L. S. Assn. (M), Marion.....	1917	1925	....	Liquidated by Ohio Ins. Dept.
Farmers & Stock Breeders L. S. Ins. Co. (S), Columbus.....	?	?	....
Pennsylvania:				
Northampton County Horse Assn. (M), Butztown.....	1828			
Exeter L. S. Ins. Co. (M), Reading	1853			
Mutual L. S. Ins. Co. of Horshaw (M), Fort Washington.....	1853			
Goshenhoppen Mutual L. S. Ins. Co. (M), Pennsburg.....	1856			
Tylersport Mutual L. S. Ins. Co. (M), Tylersport.....	1857			
Danboro L. S. Mutual Ins. Co. (M), Danboro.....	1861			
Douglass Mutual L. S. Assn. (M), Douglassville.....	1862			
Trumbauersville Mutual Horse Insurance and Detective Assn. (M).....	1868			
Northampton Mutual L. S. Ins. Co. (M), Easton.....	1869			
National Mutual L. S. Ins. Co. (M), Mt. Union.....	1882			
Farmers Mutual L. S. Ins. Co. of Mercer Co. (M), Jackson Center	1883			
Pennsburg Mutual Horse Assn. and Detective Company (M), Pennsburg.....	1886			
Globe Mutual L. S. Ins. Co. (M), Springtown.....	1887			
Londonderry Township Mutual L. S. Ins. Co. (M), Elizabeth- town.....	1887			
Hatboro Mutual L. S. and Protec- tive Ins. Co. of Montgomery Co. (M), Hatboro.....	1888			
Lower Providence Mutual L. S. Ins. Assn. (M), Lower Providence or Eagleville.....	1889			
Peoples Mutual L. S. Ins. Co. (M), Phila.....	....	1889		Retired
Adams County Mutual L. S. Ins. Co. (M), Mummasburg.....	1892			
Mutual L. S. Co. of Horshaw (M), Doylestown.....	1895			
Upper Providence L. S. Inc. Assn. (M), Trappe.....	1902			
Dublin Mutual L. S. and Protec- tive Co. (M), Dublin.....	1905			

RECORD OF LIVESTOCK INSURANCE INSTITUTIONS IN THE
UNITED STATES, 1828 TO 1925—*Continued*

Company	Year founded	Year retired or liquidated	In business 1927	Remarks
Pennsylvania—Continued				
Mutual L. S. Ins. Co. (M), Easton	1905			
York County Mutual L. S. Ins. Co. (M), York.....	1907			
Penna. Mutual L. S. Ins. Co. (M), Erie.....	1908	....	Yes	
Farmers and Breeders Mutual Reserve Fund L. S. Ins. Co. (M), Williamsport.....	1909			
Mutual L. S. Ins. Co. (M), Eliza- bethtown.....	....	1918		Dissolved
Horse Insurance Fund of Retail Grocers Assn. of Phila. (M)....	?			
Lower Heidelberg L. S. Ins. Co. (M), Reading.....	?			
North Wales L. S. Ins. Co. (M), No. Wales.....	?			
Terre Hill L. S. Ins. Co. (M), Lancaster.....	?			
Rhode Island:				
Rhode Island Mutual L. S. Ins. Co. (M), Providence.....	1888	1896		
Rhode Island L. S. Ins. Co. (S), Providence.....	1894	?		
Hope L. S. Mutual Benefit Assn. (M), Providence.....	1899	1910		Reinsured
Atlantic Horse Ins. Co. (S), Providence.....	1907	1915		Reinsured in West- ern L. S. Ins. Co.
South Carolina:				
Mutual L. S. Ins. Assn. (M), Yorkville.....	1905			
Farmers L. S. Ins. Co. (S), Rock Hill.....	1907			
Mutual Protective Assn. (M), Gaffney.....	1908			
Mutual L. S. Ins. Co. (M), Yorkville.....	?			
Farmers Mutual L. S. Ins. Co. (M), Oconee.....	?	1925		Receiver appointed
Texas:				
Standard Mutual L. S. Ins. Co. (M), Dallas.....	1905			
American L. S. Ins. Co. (S), Beaumont.....	?	1908		Retired
Union L. S. Ins. Co. (S), Dallas...	1908	1908		Receivership
Houston L. S. Ins. Co. (S), Houston.....	?	1909		Reinsured in Indiana and Ohio L. S. Ins. Co.
Central Texas L. S. Ins. Co. (S), Marlin.....	1912			

RECORD OF LIVESTOCK INSURANCE INSTITUTIONS IN THE
UNITED STATES, 1828 TO 1925—*Continued*

Company	Year founded	Year retired or liquidated	In business 1927	Remarks
Vermont:				
Vermont L. S. Ins. Co. (S), Burlington.....	1895			
Washington:				
Pacific L. S. Ins. Co. (S), Seattle..	1889			
Mutual Animal Protective Assn. (M), Seattle.....	1905			
Northwestern L. S. Ins. Co. (S), Seattle.....	1907			
Interstate L. S. Ins. Co. (S), Seattle.....	?	1908		Failed
Farmers Mutual L. S. Ins. Co. (M), Spokane	?	1909		Receivership
Wisconsin:				
Badger Mutual L. S. Ins. Co. (M), Milwaukee.....	1897	....	Yes	
Mutual Live Stock Ins. Co. (M), Appleton.....	1900	?		
Wilton Mutual Cooperative L. S. Assn. (M), Wilton.....	1908			
Farmers Mutual L. S. Ins. Co. (M), Menominee Falls.....	1910			
Wisconsin Fire and L. S. Ins. Co. (S), Madison.....	1919	1924		Reinsurd by Hart- ford L. S.
Not specified:				
Phoenix Mutual L. S. Ins. Co. (M)	?	?		?
Canada:				
Canadian Mutual L. S. Ins. Co...	1905	?		
General Animals Ins.Co.Montreal	?	?		

M=Mutual; S=Stock.

Sources: Spectator Year Books and other manuals, 1890 to date; Commissioners of Insurance; and files of Insurance Times, Insurance Monitor, 1870 to date; Farm Bureau Agents.

Alabama.

Sections 8509-8513 of the Alabama Code of 1923 contains the law on livestock insurance in that State. The Hartford Live Stock Insurance Company operated in Alabama at one time, but ceased its operations some time ago. The Hartford Accident & Indemnity Company has written some livestock insurance in this State, but the volume of business has been more or less negligible. The Alabama Mutual Live Stock Insurance Company operated at one time in the State. The company retired in 1909.

Arizona.

About \$3,800 of premiums were received by the Hartford Live Stock in Arizona during 1926.

California.

Livestock insurance in California is written under the eighteenth classification of Section 594 of the Political Code. The California Mutual Live Stock Insurance Company (Mutual) transacted business in the State for about two years (1909 and 1910) on the assessment plan. The company went into receivership about 1910. The Hartford Live Stock Company and the Hartford Accident & Indemnity Company are licensed to transact this type of business in this State. The first company had a premium volume of \$80,000 and the second a volume of about \$2,800 in the State during 1926. County mutual fire insurance companies are not permitted by the laws of California to write any other than fire risks.

Colorado.

Colorado has no law specifically applying to the transaction of livestock insurance. Such business is done by casualty companies and is reported in the miscellaneous convention blank. The only company now reporting livestock business in the State is the Hartford Live Stock Insurance Company. In 1927, that company reported \$1,602 in premiums received and \$3,696 in losses paid.

Some years ago, the Nebraska Live Stock Insurance & Indemnity Company, subsequently the Nebraska Indemnity Company, did a fair volume of business in the State, but withdrew on December 1, 1924. The Colorado Live Stock Insurance Company of Loveland did some business in the State prior to 1888,

when it retired. The Rock Mountain Live Stock Insurance Company, Denver, was reinsured in 1917 in the Iowa State Live Stock Insurance Company. The county mutual property insurance associations cover livestock, of course, in their regular policies, but none does a strictly livestock business.

Connecticut.

The Hartford Accident & Indemnity Company (\$135,000 in Connecticut premiums, 1926) and the Hartford Live Stock Insurance Company (\$23,000 in Connecticut premiums, 1926) are the only two corporations doing this class of business in the State. The livestock business of the Hartford Accident & Indemnity has decreased since the Hartford Live Stock Insurance Company began business.

The Aetna Live Stock Insurance Company of Hartford retired in 1868 as did also the Hartford Live Stock Insurance Company (No. 1). Some livestock reinsurance has been written by the First Reinsurance Company of Hartford.

Delaware.

The Delaware Live Stock Insurance Company of Wilmington was organized in 1889. No further information is at hand regarding this company. The Hartford Live Stock Insurance Company received about \$5,000 in Delaware premiums in 1926.

District of Columbia.

There does not seem to be much demand in the District for this type of coverage. The Hartford Live Stock Insurance Company transacts what business is offered. The Marine Act of March 4, 1924, title II, Section 8, authorizes insurance "against loss or damage by theft, injury, sickness, or death of animals, and to furnish veterinary services." In 1904, the Interstate Live Stock Insurance Company was licensed, but went into receivership in 1905.

Florida.

Chapter 5887, Laws of Florida, Acts of 1909, authorizes companies having \$200,000 in approved securities to write livestock insurance in Florida. In 1910, the Indiana & Ohio Live Stock Insurance Company operated in the State. The Hartford Accident Indemnity and the Hartford Live Stock Company have also written some business in Florida. In 1921, the Union In-

demnity Company had a premium volume on livestock business in Florida of about \$2,903.

Georgia.

Livestock insurance is classified in this State as casualty insurance, and there is no specific law applying to this line of business separately. The only company writing livestock insurance in Georgia at the present time is the Hartford Live Stock Insurance Company. The Standard Accident of Detroit was reported to have done a very small livestock business in Georgia in 1926 (\$85 in premiums). There is no information available on livestock insurance by county mutual property insurance companies in the State.

The Southern Live Stock Insurance Company of Atlanta was licensed in 1892 and retired in 1899. Other companies which seem to have operated in the State are the National of Fitzgerald, Ga. (1903); the Mutual of Athens (1905); the Southern Mutual of Elberton (1906); the Athens Cooperative (1906); and the American at Macon (retired 1908).

Idaho.

In this State, the Hartford Live Stock Insurance Company is the only corporation accepting risks of this character. The Mutual Live Stock Association and the Intermountain Mutual, both of Boise, were in business in 1905.

Illinois.

In this State, livestock insurance may be written under the eighth subdivision of Section I of the Stock Casualty Act and under subsection 7 of Section VII of the Mutual Act of 1915. The developments in livestock insurance in Illinois in recent years are shown in the foregoing table, page 348.

While the Farm Bureaus of Illinois have made a study of the farm insurance problem and have developed fire, hail, windstorm, tornado and automobile insurance for their members, no similar studies have been made of livestock insurance in the State. In 1926, about \$29,000 in livestock premiums was received in the State, all of it in the Hartford Live Stock and the Hartford Accident & Indemnity.

Indiana.

This State is the home of the old Indiana & Ohio Live Stock Insurance Company of Crawfordsville, the training school for most of the underwriters who later conducted many of the companies having a short experience in the Middle West. This company was assumed by the Hartford Live Stock Insurance Company in 1916.

Iowa.

Livestock companies in Iowa date from the founding of the old Northwestern Live Stock Insurance Company of Des Moines, in 1886. This company retired, while still solvent, in 1894 in consequence of the sharp fall in prices of farm animals during the 1892-1893 depression. This company employed agents on a fixed salary basis. The company believed that livestock insurance could not be written satisfactorily through agents on commission.

Kansas.

There have been, at various times, mutual livestock institutions operating in Kansas. The first one, according to the records, was the American at Wathena, founded in 1898. At the present time, the Hartford Live Stock Insurance Company seems to be the only corporation handling a considerable amount of such business in the State. In 1926, that company received \$2,573 in Kansas premiums.

Kentucky.

The Hartford Live Stock Insurance Company and the Hartford Accident & Indemnity Company seem to be the principal carriers in the State. Kentucky Live Stock Insurance Company of Louisville (founded, 1913) was reinsured in the Hartford Accident and Indemnity Company. The Car & General Insurance Corporation, Ltd., of England, writes some insurance on race horses through its local agent at Lexington. Another "Kentucky Live Stock" seems to have done business for a time, and was reinsured by the Tennessee Indemnity Company in 1912.

Maine.

There are no mutual cattle insurance associations in this State. The Maine Live Stock Insurance Company, Portland, was in busi-

ness from 1895 to 1908. The Hartford Live Stock Insurance Company received \$6,162 in Maine premiums in 1926.

Maryland.

In this State, companies writing livestock insurance are not separately classified, but are grouped under casualty or miscellaneous companies. The laws of Maryland do not make any special provision for this line. The Provident Mutual Live Stock Insurance Company of Baltimore was organized in 1914. The Hartford Live Stock received \$8,911 in Maryland premiums in 1926.

Massachusetts.

The Security Live Stock Insurance Company was organized in Boston in 1891.

Michigan.

The only company authorized to do livestock insurance in Michigan at the present time is the Hartford Live Stock Insurance Company. The farm mutuals insure livestock against fire and lightning, but there is no information on the extent of the practice. In 1910, there was organized the Negaunee Cow Insurance Association. The aim was to insure owners of cows against death by natural causes or from accident. A flat indemnity of \$60 was planned. It said that the Association had a membership of 110, and the number of cows insured was more than 500. Steps were taken to identify the insured animals. The Association operated on the assessment basis.

The Michigan Live Stock Insurance Company, Detroit, operated from 1904 to 1912, at which time it went into receivers' hands. The Michigan Mutual of Saginaw was organized in 1914. The Hartford Accident & Indemnity and the Hartford Live Stock had together a premium volume of \$21,000 in Michigan during 1926.

Minnesota.

Livestock insurance in this State is authorized under Section 29, subdivision 10 and Sections 470 and 485 of the Insurance Laws of the State. The only company writing this line in Minnesota, at the present time, is the Hartford Live Stock Insurance Company. The National of St. Paul was organized in 1887 and retired in

1908; there is a record of the retirement of the American Live Stock Insurance Company, St. Paul, in 1888. The United States Live Stock Insurance Company, Fergus Falls, was organized in 1890.

Missouri.

The only carrier of the line in this State is the Hartford Live Stock Insurance Company (about \$8,000 of premiums in 1926). Several years ago, one or two other companies were writing livestock insurance in this State, but there is little if any information available regarding their history or the reasons why they ceased writing business. There is a record of the Stallion and Jack Owners Inter-insurance Alliance, Kansas City, liquidated in 1914. Farmers mutual insurance companies are not permitted to write livestock coverage in Missouri.

Montana.

The Hartford Live Stock Insurance Company does most of the livestock business in Montana (\$4,400 in 1926 premiums). There are no mutual cattle associations or companies. The Montana Live Stock Insurance Company operated in the State at one time. It reinsured in the Iowa State, in 1917.

Nebraska.

Livestock insurance is referred to in Section 7814 of the Insurance Law of the State. Two livestock companies were organized in the State, the American Live Stock Insurance Company of Omaha, 1919, and the Nebraska Live Stock Insurance Company, 1916. Both companies found the business quite unprofitable. There is a record also of the Western Horse and Cattle Insurance Association of Omaha, retired in 1890.

In March, 1924, the American reinsured its business in the Hartford Live Stock Insurance Company and then went into voluntary liquidation. In June, 1923, the Nebraska Live Stock Insurance Company reinsured its livestock business and changed its name to the Nebraska Indemnity Company. It is still operating as an automobile insurance company. The Hartford Live Stock Insurance Company is the only corporation writing this line of business in the State at the present time (premiums \$7,400 in 1926). There is no information available as to livestock clubs among farmers in the state.

Nevada.

In Section 948 of Cuttings Compiled Laws of Nevada, approved March 23, 1891, is found the text of a law which may be interpreted to prescribe the method for entrance into Nevada of out-State companies engaged in the business of life, health and accident insurance of livestock on the assessment plan. At the present time, the Hartford Live Stock Insurance Company is the only carrier of the line in this State (about \$4,700 in 1926 premiums). The majority of the livestock in Nevada runs an open range and insurance companies do not care to accept that class of hazard. There does not seem to be any tendency toward the organization of mutual insurance companies.

New Hampshire.

There are no mutual cattle associations or societies in this State. The Hartford Live Stock Insurance Company provides such insurance (\$1,761 in 1926 premiums). At one time, the American Live Stock Insurance Company, Manchester, operated in the State. It was organized in 1891.

New Jersey.

At the present time, only one company is authorized to write this class of business in the State, and that company is the Hartford Live Stock Insurance Company. During the year ended December 31, 1927, the net premiums received on New Jersey risks totaled \$22,141 and the losses paid aggregated \$16,692. The record of other livestock insurance corporations which have done business in the State is shown in the foregoing table, page 351.

New York.

At the present time, the Hartford Live Stock Insurance Company is the only corporation transacting this line of business in the State (1916 premiums, \$119,000). The New York record in the past is shown in the foregoing table, page 351.

North Carolina.

The farmers of the State have had very little experience with this class of business. The Hartford Live Stock Insurance Company is the only corporation specifically authorized to do business in the State (1926 premiums, \$4,400). It has been said that no

North Carolina company has ever been organized to write the line. I find, however, that the companies mentioned in the table introducing this section, one domestic stock company and two domestic mutuals have done business in the State.

North Dakota.

Article 21 of Chapter 65 of the Insurance Laws of North Dakota contain the provisions covering the transactions of live stock insurance. The amount of business written in recent years has been negligible. There do not seem to be any livestock associations or clubs organized among the farmers of North Dakota. The North American did business in Dickinson in 1892 and the Dakota Live Stock and Casualty operated from 1913 to 1915.

Ohio.

The record of domestic Ohio companies and associations begins with 1887. At the present time the Hartford Live Stock and the Hartford Accident and Indemnity transact business in the State. The two companies together had a premium volume in Ohio of about \$20,000 in 1926.

Oklahoma.

The transaction of livestock insurance in Oklahoma is covered by the provisions of Subsection 14, of Section 14 of the Insurance Code of the State. This is Section 6666 of the Compiled Oklahoma Statutes, 1921 edition. This section of the law provides specifically for the organization of companies covering "loss of life or damage to livestock." The Hartford Live Stock Company is the only carrier in the State at the present time. The volume in 1926 was small. There seem to be no mutual cattle insurance associations in the State.

Pennsylvania.

The long record of Pennsylvania since 1828 is shown in the foregoing table, page 353.

About 1903 it was reported that a mutual society had been formed at Arnot, Pa., entitled the Union Cow Club of Arnot, Pa. It was then proposed to insure cows more than one year of age and not more than 10 years of age. Only those animals were to be insured who were a source of profit to their owners. Cows dying between March 1 and September 30 were to be paid for

on the basis of \$30 per cow. Deaths of cows between October 1 and February 28 were to be paid for at \$25 a cow.

Rhode Island.

There are no special laws regulating livestock insurance in this State. The companies transacting the business are classified under the Miscellaneous list. A Rhode Island company, to transact the same business, could do so only by charter obtained through the General Assembly.

South Carolina.

The list of domestic companies operating at one time in South Carolina has been given. At the present time the Hartford Live Stock is the only carrier in the State (1926 premiums, \$8,333).

South Dakota.

There are no mutual cattle insurance associations or societies in South Dakota. Cattle are insured by all fire insurance companies writing farm business in the State at the regular rate provided for farm property, under policies which cover loss by fire, lightning, windstorm, tornado and hail. Cattle are insured up to \$60 per head. Between ages 1 and 2, 50 per cent. of the value is allowed, or \$30 of insurance; and for animals below 1 year of age, 25 per cent. of the value, or \$15 per head is allowed. At the time the insurance is written, the insured must purchase cover in an amount equal to 75 per cent. of the total number of cattle owned by him at the time the policy is issued, multiplied by the maximum amount payable. These policies are usually written for a term of from 3 to 5 years. Pure-bred livestock is covered specifically against the above mentioned hazards, but take a special rate and are written for one year only. The Hartford Accident and Indemnity offers coverage for pure-bred cattle in this State, but apparently no business of this type has been done in recent years.

Tennessee.

There are no mutual insurance associations or societies specifically authorized to do livestock insurance business. The 30 mutual farm insurance associations or companies writing strictly farm insurance insure the farmers' cattle along with other property. The Tennessee Mutual Fire Insurance Company insured

livestock against fire at a cost of about 60 cents per \$100 of insurance. Since March 1, 1927, this rate has been raised to 75 cents per hundred. The Hartford Accident and Indemnity Company of Hartford, Conn., seems to be the one carrier of livestock insurance in this State. The volume is not large, when one considers the extent of the dairy, horse and mule industry in the State.

Texas.

The Texas record on domestic companies has been given. The Hartford Live Stock had a premium volume of \$2,436 in Texas during 1926.

Vermont.

The Vermont Live Stock of Burlington was organized in 1895; date of retirement not known. At the present time, the Hartford Live Stock is the only carrier in the State (1926 premiums, \$3,463).

Virginia.

The transaction of livestock insurance in this State is authorized in Section 4304 of the Virginia Code, which permits "insurance upon the lives of horses, cattle or other livestock." The only companies writing this class of business in Virginia in recent years are the Hartford Accident and Indemnity Company and the Hartford Live Stock Insurance Company. There is no record of livestock insurance by county mutual fire associations, nor by any other societies or clubs.

Washington.

What little business is done in the line in this State is written by the Hartford Live Stock Insurance Company. Some 20 years ago, there were a number of companies organized in Washington, but these failed and there is no convenient record of their operations and history. The synopsis given at the beginning of this section reviews the record of domestic companies in the State.

West Virginia.

The only company which has persistently written livestock business in this State is the Hartford Accident and Indemnity Company (1926 premiums, \$2,500). One or two companies, some years ago, specialized in this line of insurance in West Virginia, but retired after a non-profitable experience.

Wisconsin.

The Badger Mutual Live Stock Insurance Company, Milwaukee, insures livestock located in the vicinity of Milwaukee for an amount not to exceed \$300 per annum. Under its policies, it offers free veterinary service. The veterinary is also the manager of the insurance company. In the opinion of one observer in Wisconsin, the success of this little company is due to the fact that the amount of insurance is limited to the nominal sum of \$300 and because the risk is located within a short distance of the company's office. The veterinary, and manager of the company, is thus able to give prompt medical attention to any animal which needs his services. It may also be true that the manager of the company has a close personal acquaintance with the principal livestock owners in the vicinity, and is thus able to control hazard factors. It is also of interest to know that recently the Sheboygan County Cattle Owners Insurance Company was organized, the purpose of which was to insure cattle against loss which the farmers may sustain due to reaction to the tuberculin test. The amount of loss payable under that company's policy is limited to the difference of the market value of the animal and salvage and reimbursement which the owner receives for each condemned animal from the State and Federal Government.

A short table on the recent experience of the Badger Mutual is given below:

TABLE 21
BADGER MUTUAL LIVE STOCK INSURANCE COMPANY
MILWAUKEE, WISCONSIN. FOUNDED 1897

Year	Net Premium Written	Premium Plus Interest and Rents	Losses Paid	Underwriting Expense Paid
1926	11,664	11,664	8,113	4,208
1925	12,507	12,507	...	4,210
1924	12,445	12,445	9,216	4,215
1923	13,688	13,688	10,819	4,080
1922	15,945	15,945	10,272	5,241
1921	16,647	16,647	12,937	4,166
1920	13,152	13,161	11,964	6,813

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CAN INSURANCE HELP THE UNEMPLOYMENT SITUATION?

BY

I. M. RUBINOW*

I was indeed delighted to receive the invitation of your Committee to speak on this subject, not only for sentimental reasons, because though having abandoned the casualty field to enter an entirely different line of business—if philanthropy be a business, I enjoy again meeting my old associates and seeing the remarkable development of this organization in whose creation I had taken an active part nearly fifteen years ago, but even more because of the nature of the request.

It was always my ambition to see this organization of highly trained experts become not only the center of technical information on insurance matters, but also be a force for extension of the insurance principle into greater social usefulness. Your question is not a selfish one: "Is there anything in unemployment insurance for casualty companies?" nor is it purely a technical one: "How to write insurance business?" You want to know whether insurance can help the employment situation, and the unemployment situation in its social aspects transcends the special interests of insurance companies. On this grave problem, I am indeed glad to speak both as a former insurance expert and as a social worker at present.

Can insurance help? One might suggest that before a group such as this, the question should not be asked except in an oratorical fashion. Is there any problem of economic hazard in which conceivably the insurance principle could not help? It is only necessary to quote the essential article of faith of Lloyd's, "You specify the hazard and we will quote the rate." It is the essential principle of insurance philosophy that whenever there is a risk whose incidents are uncertain and the hazard is great, there the principle properly applied can be of great social value. But it is not necessary to be theoretical only, to reason only from abstract principles, for unemployment insurance is no more a virgin field.

Before, however, we come to the discussion of the insurance aspects, let us pass over the employment situation in a very

*This paper presented by invitation of the Committee on Program.

rapid review. There is unemployment in the land; no one who keeps his finger on the pulse of economic life, as actuaries and statisticians must, can possibly question that. It has been with us for some time. It has become particularly acute during the winter which has just passed. There has been some slight improvement during the past month or two but it is no more than the usual seasonal fluctuation which must not be exaggerated.

Conditions of employment are still very much below those of the corresponding months of the year before and the year before that. It is true that we have no accurate measurement of the extent of unemployment. We have never had it. We still lack facilities for making such measurements. With all the tremendous wealth of American statistics, we have failed to develop the necessary machinery for measuring an aspect of economic life which is of much greater importance than such facts properly recorded in our statistical publications as the number of sick hogs or the number of eggs laid and consumed.

Because of absence of continuous data, we are forced to make estimates and guesses and special investigations when the situation becomes critical, and data collected under such hysterical conditions are not likely to be satisfactory. Unemployment becomes a political issue, hysterical over-statements are matched by complacent denials of obvious things.

You will undoubtedly remember the estimate published by the United States Department of Labor when ordered to do so by a senate resolution. The number of unemployed was estimated at the time (March, 1928) by the Secretary of Labor at a little over one and three-quarter millions—1,870,050, and don't forget the 50 as an evidence of assumed accuracy. The estimate, when announced, resulted in a storm of protests. The department was charged with maliciously under-estimating the situation. Much of the discord, however, was largely due to a misunderstanding. Because of the method of computation, the Department of Labor did not really state that there were only 1,870,050 persons unemployed. It simply said that there were in 1928 so many people less employed than there had been in 1925. We can make the obvious correctives to this estimate. No sane man would assume that there was altogether no unemployment in 1925. Such a situation hardly ever exists or existed, except possibly during the feverish industrial activity of the war

period when everyone, who was at all employable and was not drafted into the army, had no difficulty in obtaining a job. 1925 was not the peak of American industry. It was below 1924. An estimate of one million people unemployed in 1925 does not appear excessive.

And then three years have elapsed between 1925 and 1928, that should be obvious, at least to statisticians. The population of this country is increasing by about one million and a half each year, and forty per cent. of the population is employed in gainful occupations, which means that the working population of the country increases each year by some 600,000, and that the potential working population in 1928 was about two million greater than in 1925. Twice a year, in February and June, colleges, high schools and even the public schools throw thousands and thousands of young men and women into the labor market. Normally, the employed population of the country should increase by at least one-half million each year. For three years another million and a half must be added. And so it is obvious that if Secretary Davis's estimate is fairly accurate, the actual total number of unemployed during the winter must have been somewhere between four and five million people—surely a serious enough situation.

I could stand here for hours and discuss the cause and speculation as to causes. It is an axiom of medical science that when many causes are advanced for the disease, a safe presumption is that the real cause remains unknown; even so in economics. For a century or two every prominent economist, from Adam Smith to Wesley Mitchell, and their total number is legion, has been speculating on the causes of financial crises and depressions. Every conceivable factor has been suggested—cosmic, climatic, mental and moral, sun spots, presidential elections, under-consumption and over-production, new machinery and absolute industrial organization, influenza epidemics and the flapper age—anything that social economic philosophers could lay their hands on.

To this most interesting, though hardly profitable discussion, Secretary Davis has made a most valuable contribution in explaining the present unemployment condition as due primarily to two factors—the Mississippi flood and the Florida hurricane. Whether the collapse of the Florida real estate boom is included in the hurricane, is uncertain. When industrial depressions

become a subject matter for political recriminations, for party charges and counter charges, it would seem to be safest to place the responsibility upon an act of God. Surely even the most dyed-in-the-wool Alabama Democrat could not hold the Republican party responsible either for the hurricanes or floods, though there may be some responsibility placed upon the Philadelphia real estate operators for the collapse of the Florida real estate boom.

Undoubtedly, discussion as to causes of crises and depressions in general and each particular economic depression will go on. They make interesting, if not always profitable speculation. There is a field for acute intellectual gymnastics, many doctors' dissertations have been written and will be written about it. One may hope, of course, that some day the real cause, if there be one real cause, will be discovered and isolated like the bug of influenza or of typhoid fever. There will be rejoicing and prophylactic inoculations will be made.

But in the meantime, economic crises of various degrees of intensity continue to occur and recur with almost sickening regularity. What we are going through now in 1928 is not so very much different, though perhaps not quite as intense as what we went through in 1921, in 1914 before that and also in 1907. I don't know why there was no economic depression in 1900—if there was none. Something may have slipped up in the machinery which regulates the destinies of the human race, but we do know that it did work only too well in 1893. There seems to be some dismal mystic power which awakens every seven years. One might have to go back to the dreams of Joseph for an explanation and the story of seven fat years followed by seven lean ones and perhaps learn from him the lesson of necessary preparation during the fat years for the lean ones—a lesson that seems to have been largely wasted upon the human race.

Be it as it may, here we are in the midst of this depression. Unemployment, inability to find work for people who are able-bodied and willing to work is not unknown even during the fatest years. There are hundreds of reasons for that, but presumably adjustments continually take place. A short period of temporary unemployment need not disrupt either the economic structure or the normal life of an individual in this, the richest country of the world in the richest period of its existence, but

when upon this individual unemployment is superimposed mass unemployment, the problem may become a grave one, the results serious and social harm distressing.

Can insurance help the unemployment situation? What particular aspects of the situation require help most? There are, of course, definite business aspects. There is shrinkage of production, of trade, of sales and of profit. There have been some bankruptcies, there even may have been some insurance losses. All that is unfortunate, of course, but is that the most important social aspect of the unemployment situation? Do manufacturers, merchant princes and bankers need our sympathy and our help? Of course, I am speaking at this moment as a social worker rather than a business executive, but let us for a moment forget our business affiliations and speak as American citizens, as average members of society.

As a matter of fact, even before approaching the entire problem from a humanitarian point of view, we might point out that the depression of 1928 in some respects is very much different from the earlier depressions, particularly those of 1893 and 1907. In fact, I hardly believe the annals of American economic history have ever presented the situation of serious mass unemployment at one end and of feverish extravagance, bull market, increased applications to relief agencies and creation of fortunes on the other; shortages in relief society budgets and increased saving bank deposits accompanied by increased sales, primarily in luxuries of life such as automobiles and jewelry. The present economic and social situation is, therefore, a complicated one but this is not a time to go into the analysis of this situation.

What we as social workers do know is that this period of unemployment, as all preceding periods, has resulted in a very great increase of human suffering as measured by application to social agencies for relief. It is, of course, possible to disregard it or not to see it, to remain in total ignorance of it. Broadway, Michigan Avenue and Market Street are busy; the motion picture industries prosper. One has to do a little exploration into the byways of American cities. The only difference between the professional social worker and the successful business man in this regard is that the social worker does not have to look for the antisocial effects of the unemployment situation. Those who suffer seek him out of their own volition.

Some thirty years ago, the famous social worker, Jacob Riis, startled the reading public by his book, "How the Other Half Lives." America has become very prosperous since. I would not want to exaggerate the problem unduly. It is not so much the question now of the other half as far as actual suffering resulting from unemployment is concerned, it is a question perhaps of one-tenth rather than one-half, but that tenth does suffer and even a tenth of the American population makes for goodly numbers. To those who are out of work and vainly searching for it, and out of funds and forced to go without the necessities of life and compelled to appeal to private and public relief agencies, there is little consolation, maybe on the contrary only additional irritation, in the fact that they are in the minority, that they are only ten per cent., that the majority still remains prosperous and happy, for suffering increases by contrast with ease and comfort and plenty.

So here is the important problem created by the unemployment situation. It is not so much a theoretical discussion of the true causes. Scientists may worry about that, and let us hope not altogether unproductively. One cannot, for instance, escape the conviction that to a large extent the difference in the picture of unemployment in 1928 and depression of 1907 is due to the operation of the Federal Reserve System. Other similar discoveries and inventions may help the situation in the future. Nevertheless, there remains the important problem.

It is not the question of profits and dividends and price levels on the stock and bond market. The important unemployment situation must be measured primarily in human not in business values, in the number of people out of work, in the number of homes knocked off at sheriff's sales, in the number of rents unpaid and children under-fed and men and woman breaking down from need, fear and worry. Is it not after all the greatest problem before the American people? We had enough experience as to that not only in this country, but throughout Europe. Mass unemployment always means under-nourishment, increase in disease, increase in crime and increase in mental disorders. Doesn't this situation require interference? Can we do something essential and constructive about it, can the insurance principle be applied?

Well, why not? Is not unemployment essentially a hazard?

It is a measurable hazard. We have had a long experience with it. Its extent fluctuates from day to day, from month to month, from year to year, from one cycle to another. No one who is working for a wage is absolutely guaranteed against it, even though some are necessarily more subject to it than others.

The great social problem is not that a certain number of people remain idle, though there is in idleness a social economic loss not to be disregarded; much more threatening, however, is the fact that remaining idle, so many of them also remain without means, so many of them must become paupers against their will. What objection can there be to a creation of a common fund out of which payments can be made to those who have fallen victims to this risk? It is the application of the same identical principle that has become so common, so necessary in facing the hazards of fire, of death or accident.

I know the objections which will be raised—that comparisons are dangerous, arguments that unemployment is a peculiar hazard, that it may be stimulated or self-induced, that it is difficult to verify or control, that it will stimulate malingering and fraud, so on and so forth, *ad infinitum*. Now these arguments which have been made for at least twenty years, might have had a certain convincing force, though similar arguments have been advanced against every form of insurance. There is arson in fire insurance, suicide and murder in life insurance, and as to burglary and theft policies on pearl necklaces, perhaps the less said the better. Many of those present will still remember similar discussions when compensation insurance was being legislated into existence. All that has been said before and yet the insurance business has been growing tremendously, not only for the benefit of the insurance companies and stockholders but for the benefit of the American people as a whole. Do we lack courage to try out unemployment insurance as we have tried compensation?

But do we have to try it, do we have to enter an uncharted field? Even if we had, the American people have not been afraid to be pioneers. After all, our very national origin must be found in pioneering. We have pioneered in industry, in building as in political organization. We are not afraid to scrap old machinery to try out the new. We do not hesitate to tear down a twenty story building if we believe that a fifty-story one would result

in a more attractive skyline. Has not all Europe admitted that it is this pioneering spirit more than any other factor which is responsible for our national wealth? Do they not all try to emulate us?

For some reason our pioneering spirit which was political one hundred years ago, has been largely technical, industrial and economic during the first quarter of the century. We were the experimental laboratory of new political ideas at the close of the eighteenth century, a laboratory of social experiment in the middle of the nineteenth century and now Europe humbly comes to learn from us the technique of new industrial development. Perhaps at any one particular time each country can only make one contribution to social progress.

But countries and nations all grow by learning from each other. We need be no pioneers today when searching for a better method of handling the problem of want and distress arising out of the irregularity of employment.

Seventeen years ago when Great Britain, staid, conservative, cautious Great Britain, launched upon a policy of compulsory unemployment insurance, the world looked askance. It did appear to be a rather uncharted sea. There were many difficulties in sight—how to determine the bare fact of unemployment, how to differentiate between voluntary and involuntary unemployment, how to avoid the great danger of encouraging unemployment by the promise of assistance. For that reason, Great Britain made the law limited in its scope and experimental in nature.

But after all, seventeen years of experience cannot be disregarded. Great Britain is not the only country with a comprehensive system of compulsory unemployment insurance. The post-war period has resulted in more social insurance legislation than had been adopted for thirty years before that. Germany, Austria, Italy, Poland and Russia have followed Great Britain's example. France is on its way. The Scandinavian countries have voluntary systems which are comprehensive in their nature. Practically all of Europe then has seen the practicability and desirability of unemployment insurance as a method of relieving distress arising out of unemployment.

Great Britain has vastly extended its experiment. It made it almost universal in its application to the wage working class.

Is it not about time that we in this country approached the matter with open minds? Our refusal to see the advantages is just as unreasonable as would be a refusal on the part of Europe to follow our industrial methods.

In its actual application, unemployment insurance has undoubtedly been successful in Europe. That does not mean that many serious problems were not met, that many serious difficulties did not have to be overcome. It is curious that we in this country have been more anxious to learn about these difficulties and point to them as horrible examples rather than to discuss calmly the tremendous advantages that have accrued to Europe.

Mention the subject to the average American business man and sometimes I am afraid even to the average American professor of economics and he will throw up his hands in horror, "The dole system, look what it has done to England." Well, supposing we do look. Immediately after the war, almost immediately after the extension of the unemployment system from two million to twelve million, unemployment was raised to a degree never known in the history of British industry. It is as if a conflagration were to confront an insurance company in the early years of its existence. With all that, the insurance company did not become bankrupt, the system did not break down. It has prevented an enormous amount of human suffering, it has preserved living and health standards of the British nation and if I must add this additional argument, it may have saved Great Britain from a social revolution not unlike the one which took place in Russia, for after all, it is sometimes quite useless to talk sober political theory to hungry stomachs.

It is true that the British unemployment insurance system did not accomplish these results without many difficulties, that it had to draw upon government credits without which a collapse might have been inevitable, but some of these credits have been paid off, others are being paid off and the very fact that these credits were possible is the strongest indication of the advantages the British system possesses. Remember that the hazard rose beyond all limits that could be expected or taken into account when the actuarial basis of the system was prepared. Remember that the benefits granted had to be extended far beyond the original promises. Nevertheless, the system still exists.

Why the "dole system?" Why has this derogatory adjective

been attached to the British system and served as a purpose for discredit in the eyes of the American public? Because, notwithstanding the great liberality, notwithstanding all the credits, it still was unable to meet the entire need arising out of the unemployment situation and, therefore, a system of direct relief had to be tacked on it—the so-called “Doles.” Supposing it be true that the system was only seventy-five per cent. insurance and twenty-five per cent. charity, in the absence of any insurance system in this country, our only way of meeting the distress is through a hundred per cent. dole system, whether it be through charity organization societies or family welfare societies, community chests, public relief departments, almshouses, etc. Obviously, the only other alternative, that of letting the underdog starve would not be quite accepted or should not be acceptable to a Christian nation. Even then the alternative of street begging and panhandling remains. Lest we forget, the same European observers who reported the wonders of American industrial development, also reported the inconsistency of panhandling on the streets of American cities.

Between the various alternatives presented then—utter neglect, individual relief, organized charity, outdoor poor relief or unemployment insurance, which one should the American nation prefer? When presented to a group of insurance actuaries, such a question may only be a rhetorical one.

Unemployment insurance is not a simple problem. It has numerous very complicated problems of actuarial science and insurance administration. Were I to go into this, many hours would be required for their exposition. No matter how complaisant your chairman, I do not want to disturb the entire session for the purpose. This much I can say, however, there is no actuarial problem that the members of this organization cannot be trusted to meet fairly satisfactorily. It is comparatively easy to shoot the whole actuarial basis of the British unemployment system full of holes, but they had the merit of courage, of willingness to try. We can profit by their experience. We can also profit by our better organization of actuarial forces. This may sound somewhat arrogant, but without undue modesty, I may state it as a definite fact that through the organization of the Casualty Actuarial Society—perhaps the greatest achievement to which I and my children on my behalf may lay credit to—we

have achieved in the correlated field of compensation insurance and casualty insurance a much higher degree of scientific development than Great Britain ever had. The fifteen volumes of the *Proceedings* of the Casualty Actuarial Society offer an indication of the fine scientific work the profession is capable of and I do not question that a similar excellent piece of work can and will be done by all of you in the field of unemployment insurance when the time comes. It will be done to make unemployment insurance safe and sound, perhaps also to make it profitable if profit should be necessary. It is unnecessary for me at this time to express any dogmatic opinion on the form of organization.

I want to finish with the hope that in consideration of the technical, actuarial and administrative problems of unemployment insurance, the members of the Casualty Actuarial Society in recognition of their professional obligations, will be duly mindful not only of the mechanical but also of the social aspects of unemployment insurance. If they do, they will have the satisfaction of knowing that not only have they developed a new line of business, but they have made possible a new and tremendously important step in social progress.

FINANCIAL RESPONSIBILITY OF AUTOMOBILE DRIVERS

BY

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The popular agitation for "compulsory automobile insurance," which has produced a typical result in the notorious Massachusetts law, is like a stone which is thrown at two birds, misses both targets, wings a smaller bird in between the two, cripples an unoffending bystander and does other damage. The two birds missed—the two objectives popularly aimed at—are accident prevention and assurance of relief to victims of automobile accidents generally. The bystander hurt is "sound insurance." The other damage done is an increase in speculative litigation. And the little bird touched—the only good effected—is the production of somewhat more general security for the recovery of damages in those automobile accident cases in which the victims can prove that they are legally entitled to damages.

Besides the Massachusetts law, there are, in response to this popular agitation, other illustrations of legislation, which is doomed to failure through a similar attempt to hit several birds with one stone. I shall return to them later. Here I would emphasize that there cannot be one remedy—a single panacea—that will effect all that the public has been misled to expect of "compulsory automobile insurance"—and that the public should be educated to abandon the vain idea of a general panacea and give more favorable consideration to less pretentious and more intelligently directed remedies for the several evils complained of.

Let us take up categorically the various objectives associated with compulsory automobile insurance in the popular mind, namely:—accident prevention; more general security for the recovery of damages in those automobile accident cases in which the victims can prove that they are legally entitled to damages; and assurance of relief to victims of automobile accidents generally.

1. *Accident Prevention.* In 1924 the National Conference on Street and Highway Safety, organized by Secretary Hoover,

*This paper presented by invitation of the Committee on Program.

entirely rejected compulsory automobile insurance as a means for increased safety, and recommended instead the control of the automobile *driver* by means of an individual driver's license, subject to suspension as a caution and to revocation as a means of permanently removing dangerous drivers from the highways. That is the standard, or expert's, means for accident prevention. Let us look through the various measures for automobile security (disregarding the laws for security by public carriers, taxicabs and the like) and see how far they assist in promoting that means, or, on the other hand, possibly tend to the contrary.

The Massachusetts compulsory automobile insurance law says nothing about *drivers*. It requires security of the *owners* (*registrants*). In May, 1927, the Commercial Casualty Company canceled a liability policy on a delivery truck written in August, 1926, for the Prime Kosher Market, on the ground that there had been six accidents under the policy and that as to some of such accidents the company had been seriously prejudiced because of the assured's failure to report promptly. The assured thereupon appealed to the Board of Appeal to compel the continuance of the policy, contending that the drivers involved in the accidents had all been promptly discharged and that the delays in reporting to the insurance company had been due to delays by the drivers in reporting to the assured. The Board granted the appeal and ordered continuance of the policy. This is simply an illustration of how the Massachusetts law works. To my mind, a law that compels an insurance carrier to continue indefinitely to insure a motor vehicle owner who continually employs reckless drivers most emphatically does not contribute to the removal of such drivers from the highways.

In comparison, the Connecticut law does far better. That law empowers the Motor Vehicle Commissioner to require security, up to certain limits—in the form of an insurance policy, bond, deposit, etc.,—from any person convicted of (or who evades prosecution for) violation of certain provisions of the motor traffic laws, or who is concerned in any motor vehicle accident causing injury to person or damage to property in excess of \$50, in default of which such person's license or registration shall be revoked; or, if he is a non-resident, he shall be forbidden to operate any car in the State or to have operated therein any car owned by him. The primary purpose of this law is to require

security for the payment of damages from those persons most likely to cause injury to others, without burdening the great body of careful motorists who seldom do harm; but, incidentally, since it calls for security from the *driver* responsible for the accident and the alternative is revocation of the *driver's license*, and not only revocation of the *owner's registration*, this law unquestionably tends to remove reckless drivers from the highways.

In Maine, Minnesota, Rhode Island and Vermont there are now laws (adopted in 1927) similar in form and effect to the Connecticut law, with the material exception that the Rhode Island law is defective (in some cases) in penalizing the *owners* alone, leaving the reckless drivers (who are not owners) unpunished.

The New Hampshire law (which is an adaptation of the "Stone Plan") provides that, in an action for damages for injury to person or property resulting from an automobile accident, the court, upon application of the plaintiff, shall make a preliminary inquiry, and, upon finding that the defendant is probably liable, the court shall compel him to deposit security for the payment of whatever judgment may be rendered (subject to limits) in default of which the defendant (who may be the driver or/and owner) shall forfeit his license and registration. It further provides that a certificate of liability insurance, with the prescribed coverage, is to be accepted as sufficient security. The object of this law is to induce motorists generally to insure, since an uninsured owner or driver, if involved in an accident, is liable to be suddenly held up, and, in default of heavy security, to lose the use of his car and/or the right to operate any car. But, incidentally, insofar as it may result in revocation of *drivers' licenses*, it may tend to eliminate reckless drivers.

Of the automobile security laws just reviewed, other than the Massachusetts law, it should be noted further that none prevents "selection of risks" by insurance carriers. Consequently, however ineffective or slightly effective for accident prevention these laws may be, at least none of them exerts any adverse influence. It is otherwise with the Massachusetts law; from the standpoint of "safety first" that law is a positive menace.

2. *More general (but not universal) security for the recovery of damages for injuries in automobile accidents in those cases in which the victims can prove that they are legally entitled to damages.*

That is what the Massachusetts law accomplishes. It does not

assure any relief to the large majority of victims of automobile accidents who, because more or less at fault themselves, are not legally entitled to damages, or who, through lack of evidence, cannot prove their right, or who are hit by foreign cars, unlicensed cars, cars used without the owners' consent, cars owned by the State or a municipal corporation, etc. In other words, it merely increases a little the extent of security for recovery of damages—for, in a large proportion of the cases in which the collection of damages is secured under the law, it would be secured anyhow by voluntary insurance or by the financial responsibility of the motorist liable. And what is the price for this small gain in security? Answer:—Demoralization of insurance; the removal of an influence for accident prevention through the elimination of "selection of risks"; an increase in "strike" and "nuisance" claims and suits; worse court calendar congestion; the imposition upon motorists of a burden and annoyance generally useless; an increase in bureaucracy; and a diversion of public effort and expenditure from accident prevention to the manipulation of "red-tape." (For a detailed explanation of some of these evil results of the Massachusetts law I must refer you to my articles in the American Agency Bulletin of March 23 and April 13, 1928.)

Is there, then, no better alternative? Sure, there is. The evil sought to be remedied by the Massachusetts law is that some unascertainable proportion of judgments for damages is uncollectible and that other valid claims for damages are not reduced to judgment because of a high degree of probability that the judgment would be uncollectible. For that evil there is a specific remedy—not a "cure-all," it is true, any more than "compulsory insurance" is really a "cure-all"—but a way of making judgments far more generally collectible by putting "teeth" in them. That remedy is to enact a law providing, in substance, that no one, against whom there is an unsatisfied and unstayed judgment for damages for injury to person or property arising out of an automobile accident, shall be permitted to register or operate a motor vehicle in the state. "Pay for the damages for which you have been adjudged liable or keep off the roads" is a rule that would accomplish good in three ways:—It would make judgment debtors try to pay up instead of trying to dodge payment; it would incite financially irresponsible drivers to be more careful, and it would remove many financially irresponsible, reckless drivers

from the roads. Therefore, in my opinion, this is the most advisable of all measures under consideration relating to automobile accidents. It has, as you know, been positively recommended by the Committee of Nine. Bills for such a measure have been passed by the Legislatures in Pennsylvania and New York. Unfortunately, the Pennsylvania bill was vetoed by the Governor, not on its merits, but because it conflicted with a peculiar provision of the Pennsylvania State Constitution; and the New York bill was vetoed by the Governor for some unexplained reason, perhaps because he favored a measure, rejected by the Legislature, for the creation of an investigating Commission.

Besides the measure just commended, there are two others that, in my opinion, merit consideration under this heading. One of the objections to compulsory insurance in the Massachusetts form is that it applies *compulsion*, which is always obnoxious, and does so far more broadly than is at all reasonable or worth while. To illustrate, I recently saw the statement, from a well informed source, that in Nebraska 40 per cent. of registered motor vehicles are "owned on the farm", that such 40 per cent. of the vehicles are involved in only about 1 per cent. of the accidents, and that their owners are 98 per cent. financially responsible. Why burden and bother the owners of those farm owned cars because security is wanted from another lot of motorists?

The "Stone Plan" (the New Hampshire law) meets that objection by not applying "compulsion" at all but making insurance almighty desirable for those motorists who operate in congested districts or are otherwise apt to become involved in accidents. And the Connecticut law meets the objection by applying compulsion only to those who have put themselves in the dangerous class by being involved in an accident or violating traffic regulations.

I think that it is a serious mistake to dismiss from consideration measures like these just because they do not pretend to cure the evil but merely to be a means of mitigating it. At least they would do no harm. Perhaps they represent the limit, beyond which it is impracticable to go without doing more harm than good. And, in any event, though promising far less, they do not fall short in performance as does the Massachusetts law.

3. *Assurance of relief to all victims of automobile accidents.* The agitation that resulted in the enactment of the Massachusetts law has aroused popular expectations or aspirations which that

law falls short of fulfilling by an immense margin. The public, or at least a highly vocal proportion of the public, have been stirred up to demand compensation for all the 25,000 deaths and 750,000 injuries that are resulting annually from automobile accidents in this country; and they want the compensation big; and they want it certain; and they want it cheap; and they want it quick; and they want it without litigation. And they have been and are being assured by distinguished jurists that they can get it just about as they want it through the mystic instrumentality of insurance. Such a fool notion really merits no consideration. But it has been recommended for favorable consideration by a committee of the New York Bench and Bar on calendar congestion, and bills designed to put it into effect have been introduced in Congress and the New York Legislature. So it is up to us of the insurance profession to bring home to the public that it is a fool notion.

Take the case in New York:—A committee of the legal profession had before it the problem of court calendars congested by a flood of negligence case awaiting jury trials. Did the committee search for a direct remedy through reform of admittedly archaic legal practice and procedure? Apparently not at all. That would have brought them up against opposition in their own profession. So they side-stepped (acting on the good old working rule that the place for reform is never at home), and recommended instead compulsory insurance of compensation for all automobile accidents. To be absolutely just, they did not recommend the *adoption*, but only a legislative *investigation*, of such a scheme. They did, however, sow their recommendation as to arouse among the ill informed public lively expectations of finding in that direction a veritable panacea for faults in the administration of justice. What a "gold-brick" to offer to the unsuspecting and confiding public! Let us analyze the proposition and see if that isn't so.

It is proposed to make "compulsory" the insurance by motorists of "compensation" for all personal injuries resulting from motor vehicle accidents on the highways, the compensation to be based upon wages, as under the Workmen's Compensation Law, where the injured persons were employed, and according to some fixed "blood-money" rates, never satisfactorily formulated, where the injured persons were unemployed—all disputes to be decided

informally and summarily by administrative officials, also as under the Workmen's Compensation Law.

Theoretically the right to benefit under such proposed insurance could be made "exclusive"—*i. e.*, exclusive of the right to full "damages" under any circumstances. Indeed, when this project was first broached by Judge Robert S. Marx, of Cincinnati, such was the proposition. But that would be too "raw". It would deny full justice to a man run down on a safety zone by a speeding "road-hog", treating him no better than if he had been injured through his own criminal wrongdoing. So now the proposition is that the victims of automobile accidents shall be given the option either to accept the benefits under the proposed compensation insurance or to sue for full damages under the public liability law where they think they can succeed.

Now, try to visualize the resulting situation for yourselves, in the light of your own experience, bearing in mind that the "ambulance chasers" would still be on the job. Every one injured, no matter how, who could produce or manufacture evidence to establish that his injury resulted from an automobile road accident would be entitled to "compensation", and every one injured in an automobile accident under circumstances now entitling him to recover damages would still be entitled to sue for damages. Claims would be multiplied enormously and doubtful claims in even greater proportion, thereby entailing a large increase in the total volume of litigation of one sort or another. It is true that under this proposed scheme some who now sue for damages would elect to accept compensation, thereby relieving the existing courts of some of their jury cases—but with compensation limited, as under the workmen's compensation laws, the lure of "punitive damages" and "sympathetic" verdicts would remain, and there would still be lots of liability suits to be tried by juries. Consequently the extent of relief to the existing courts would be speculative and uncertain, whereas the creation of a large volume of new compensation litigation before novel tribunals would be certain. Net result, therefore, "just more cats"!

But, we are told, this proposal would not merely relieve the courts "some" but it would also hit another bird by assuring relief to all victims of automobile accidents. That "listens fine". But it would be finer to compel everyone to insure himself against all injuries. Then the faultless victims of burglars and other

criminals would be protected as well as the "jay-walkers" and "joy-riders" who suffer injury through their own faults. To compel people to insure themselves may be in derogation of liberty, but, at least, it would play no favorites in the distribution of the cost; whereas there is no such redeeming feature in the proposal to compel motorists to insure all "jay-walkers" and to compel the careful and decent motorists to contribute to the insurance of all "joy-riders".

That this scheme would hit motorists hard and damage their pocket-books exceedingly is a drawback that its proponents seek to belittle. In New York city a silver tongued advocate of this pretentious "reform" told the taxicab drivers that the proposed insurance would be provided for all motor vehicles in the State at an average of \$15 per car per annum. Another advocate, less visionary, put the cost at \$26 per car. Unvisionary people like ourselves know that it probably would run up to very much more. But, just for discussion, let us accept \$26 as the average cost. That would mean about \$10 for the car "owned on the farm", and over \$200 for the city taxicab. Note how badly the taxicab drivers would have been short-changed had they got what they were being asked to favor. But that is not all. Were this scheme to be adopted, motorists would still need liability insurance—and property damage and collision insurance—just about as at present. In other words, the cost of the proposed compensation insurance would be largely additional to the burdens, for insurance and otherwise, now resting upon motorists.

It is only by belittling the cost, ignoring its injustice and assuming an improbable result in the way of relieving court calendar congestion, that this scheme can be made at all attractive.

In conclusion, I do not think it is necessary to say anything specifically about State Insurance. The danger of State Insurance, in my opinion, arises principally from the fact that it is the likely result of the probable breakdown of experiments with the Massachusetts plan or the compulsory compensation insurance delusion. In Massachusetts there may be a way out, because of the strong local popular sentiment against socialistic State enterprises. But elsewhere it is essential to guide the movement for a remedy for the "automobile evil" along safe and sane lines.

LIFE AND CASUALTY INSURANCE IN JAPAN
AND CHINA

BY

S. S. HUEBNER*

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I appreciate deeply the kind invitation to read a paper before the May meeting of the Casualty Actuarial Society. The original invitation from Mr. Moore suggested a paper on "Casualty Insurance Practices in Japan and China". I replied that my studies during my visit to those countries were confined mainly to fire, marine and life insurance, the three major types of insurance emphasized for the time being in the Orient, and that unfortunately the various forms of casualty insurance, as we know them in the United States, are either almost non-existent in these two great Oriental countries or only in their infancy. Mr. Moore replied that I should feel free to extend my remarks to life insurance and such casualty lines as I had the opportunity to observe while abroad. We arranged matters on this basis and I have called my paper "Life and Casualty Insurance in Japan and China".

LIFE INSURANCE IN JAPAN

Although the beginning of life insurance in Japan dates back to 1880, its real growth has occurred since 1900, and particularly since 1916. At the close of 1925 (figures obtained from the 1927 Japan Year Book) 44 Japanese life companies were operating with 4,693,867 outstanding contracts, representing a face value of 4,712,944,000 yen¹. Four companies confined themselves to "conscription insurance", *i. e.*, life contracts maturing at the date of entry of the insured into the nation's compulsory military service, and at the close of 1925 this business represented another 796,965 contracts with a face value of 365,312,000 yen. In addition, according to the 1927 report of the Bureau of Post Office Life Insurances, that system of Government insurance represented in 1926 a total of 10,053,639 contracts with a face value of 1,287,955,000 yen. Japanese contracts carried by foreign com-

*This paper presented by invitation of the Committee on Program.

¹The U. S. par value of the Yen is 49.8 cents.

panies, although relatively unimportant in the aggregate, represent another 34,493 contracts with an approximate value of about 133,000,000 yen. All told, therefore, Japanese life insurance involves a total of about 15,649,000 contracts with a face value of about 6,506,000,000 yen.

These foregoing figures seem rather interesting in view of Japan's late start in the life insurance field. Her outstanding volume of life insurance is equal to about 9 per cent. of the nation's estimated private wealth, whereas our total of about \$85,000,000,000 of life insurance is equal to about 25 per cent of our estimated national wealth. Roughly speaking, it would seem that Japanese life insurance, when viewed in the light of national wealth, has reached a relative importance equal to about one-third of that prevailing in the United States.

Although various foreign mortality tables are being used extensively in Japan, such as the Combined Experience Table and the American Experience Table, mention should be made of two leading Japanese tables which have also been adopted widely, namely the "Experience Table of Three Japanese Companies" and "Table No. 2 of the Bureau of Statistics of Japan". Either 3.5 or 4 per cent. has been adopted as the assumed rate of interest for rate computations. It should also be noted that nearly all of the companies, 36 out of the aforementioned 44 according to published reports, are members of the "Life Insurance Companies Association", a national organization founded for purposes of co-operation in the interest of the life insurance business.

By far the greater part of the insurance transacted by the companies is of the endowment variety. Many advised that probably 80 per cent. of the business is transacted on that plan. According to the 1926 report of the Nippon Life Insurance Company, the largest company in Japan, its whole life policies numbered 75,735 with a face value of 89,831,000 yen, while the endowment policies numbered 511,259 with a value of 510,525,000 yen.

Life insurance for family protection against death, *i. e.*, as a means of guaranteeing a potential estate, has not yet become the outstanding idea in Japan that it is in this country. Instead, life insurance is used more with a view to creating an estate through thrift and investment or to protecting the existing estate against shrinkage, through funeral costs, post-mortem taxes and

the like, at the owner's death. Owing to the prevailing family system in Japan, with its greater sense of group responsibility among all the members (including the relatives) as compared with the Western family, the need for life insurance as a means of family protection for current needs following the death of the bread-winner is not yet so generally accepted as it is with us.

I was interested in ascertaining the reasons which most generally prompted the taking of life insurance and to this end conferred with many salesmen and agency managers. They informed me that, while the taking of life insurance for protection against death was on the increase, the principal motives actuating the insured were old age protection, the payment of funeral costs (a very significant item in the Orient), the meeting of post-mortem taxes and costs, and the accumulation of funds for educational, dowry and other purposes. Moreover, the use of life insurance for credit or philanthropic purposes, so important with us, is as yet rarely employed by the Japanese.

THE POST OFFICE LIFE INSURANCE AND ANNUITY SYSTEM

To quote from the Government's last annual report, this system of life insurance was adopted as a plan of industrial insurance to meet "The urgent need of introducing that provident institution for the less benefited people". Started as recently as 1916, the the annual report for 1926 shows outstanding contracts in excess of 10,000,000 in number and a volume of insurance of 1,287,000,000 yen. The rapidly growing importance of the system would seem to justify a brief description.

Only persons between the ages of 12 and 60 may be insured under the plan, and policies are limited to the whole life and endowment varieties. The whole life policies comprise ordinary life contracts, as well as limited payment policies on the 10, 15 and 20 year payment plan, while the endowment contracts are written for 10, 15, 20, 25, 30, 35 and 40 year periods, with limited premium payment plans allowed in the case of contracts running for 20 years or more. Policies are issued only on the basis of designated multiples, and while two or more policies may be issued on any one life, the maximum amount issued is 450 yen. In this connection it might be well to observe that the average daily wage for a male factory worker in Japan for 1925 was only 1.94 yen or 97 cents in our money.

Rates of premium are based on $3\frac{1}{2}$ per cent. interest and on a mortality table which, to quote the Government's outline of the system is "computed by adding 20 per cent. to the mortality rates of the Japanese Population Table No. 2 that was compiled by the Government Statistics Bureau". Surrender values are allowed and are fully set forth in the contracts. Premiums, which are payable monthly, are collected by postmen or may be paid at any designated post office. Where policyholders are depositors with the "Postal Check and Transfer Service" they are privileged to have their premiums debited to their accounts.

The Government also extends certain favorable considerations to the policyholder, and this is particularly important in view of the absence in Japan of anything like the American system of group life insurance. Policyholders are accepted without medical examination, although an interview between applicant and a post office official is insisted upon. With a view to excluding unhealthy persons, the full insurance is not paid in the event of death within the first two years, only the premiums paid being returned in case of death during the first year, and only one-half of the sum insured during the second year. Such restrictions do not apply, however, in case of death by accident or certain diseases set forth by statute. In the event of disability by accident the system allows a waiver of premium payments. In any case premium payments may be made within one month, and an additional two months of grace is allowed. Revival is permitted within one year after the lapsing of the policy. Emphasis is also placed on life conservation work. To quote the Government's report: "Arrangements have, with full co-operation of various medical societies all over the country, been made by the Bureau of Post Office Life Insurances to provide for policyholders a medical service called for by modern requirements of health preservation at very much reduced rates of fees, charges or any other remuneration". As a further step, it is reported that "forty-eight consultation stations have, in pursuance of the Health Consultation Service Regulations of 1922, so far been established in the principal cities where the insured persons are all entitled to the benefits (health consultation and visiting nurse service) under the said regulations".

In October 1926 the Government also established a Post Office Life Annuity System on a very comprehensive scale, and in doing

so called attention to the fact that in that very year the first group of endowment policies issued by the Post Office Insurance System began to mature. Both immediate life and deferred life annuities are issued, the former to persons between ages 40 and 80, and the latter to persons between ages 12 and 60. The "maximum amount of annuity purchaseable on the life of any one person is 2,400 yen, and the minimum 120 yen under the instalment premium plan, or 12 yen under the single premium plan". Premium payments may be made at any post office named by the purchaser, but if the applicant happens to be a beneficiary under the insurance system all that is necessary is to request the Government to transfer the insurance proceeds. According to the 1927 report, only about one year following the inauguration of the plan, over 71,000 annuity contracts were already in force.

Especially worthy of note is the fact that the Japanese Post Office Insurance and Annuity System is voluntary in character. So frequently we hear the statement that Government insurance must be compulsory in order to reach large proportions. Yet Japan is apparently an exception to that viewpoint. Her post office employees, it was explained to me, work industriously (practically like our company agents) in spreading the beneficent influence of life insurance, and her citizens seem much more inclined to take seriously the counsel of their Government than is the case in many other countries. Nor do the private companies appear to be strongly opposed to the governmental system of insurance. Being accustomed to a different state of affairs, I was naturally interested in this aspect of the Japanese insurance system. Time upon time company representatives informed me that they were not opposed to Government participation, so long as it was limited to a reasonable maximum amount of insurance for the working classes. The Government, they explained, had actively put the weight of its approval behind life insurance, and the Post Office System was serving as a tremendous educational force.

The future of life insurance in Japan seems bright. The main key to the growth of insurance anywhere is education. Japan understands this, and is acting accordingly. Imagine my surprise, in view of the situation prevailing among our institutions of higher learning, when I was informed that insurance, both

property and life, was a compulsory subject of study in the business school or department of practically every Japanese university. Imagine my further surprise when I learned that the principles of insurance constitute a required course of study in practically every commercial high school of the country. That attitude is as yet comparatively rare with us, and we would do well to take an object lesson from Japan's educational program. Moreover, company officials everywhere were deeply interested in agency education and seemed committed to a policy of raising the educational level of the field force, the vital connecting link between companies and the buying public. Japan was late in getting started; her progress has been satisfactory thus far; but the real growth will come within the next decade or two.

LIFE INSURANCE IN CHINA

As compared with Japan, the story of life insurance in China is strikingly different. Although the beginning dates back some fifty years, comparatively little progress has been made. Unfortunately no official public records are available to indicate the volume of business transacted. We can only rely upon estimates which would seem to indicate that only about 50,000 lives are insured for an amount of about \$50,000,000 in our money, a volume extraordinarily small considering the length of time that various companies have been operating in that field.

Life underwriting is mostly limited to the sea-coast cities, and of the seventeen companies transacting business all except two or three hail from foreign countries. Although some of the companies offer all of the usual forms of policies, nearly all of the business written is of the endowment, and to some extent of the pure endowment, variety. No public regulation of the business has as yet been developed, and hence many undesirable practices are alleged to exist. Nor has a Chinese mortality table been created thus far, the companies using some foreign table and in connection therewith exercising their judgment, with respect to increased mortality, by extending the age or by employing extra mortality loadings. Roughly speaking, rates for insurance are said to average about one and one-half times those prevailing in the United States.

Many serious problems stand in the way of life insurance development in China. Aside from the disturbing effect of un-

settled economic conditions and the general unwillingness of people to invest in long term propositions, it must be remembered that the overwhelming mass of people in China live within the poverty line. And even concerning those who live above that line probably four-fifths are compelled to use all of their limited income for current living. Again, with respect to the limited wealthier class, the Chinese family system, with its fundamental principles of group responsibility and of inter-locking dependence of all the members, militates distinctly against the taking of life insurance. Very generally the richer families contain a great many members, often a hundred or more, and some one is always responsible for the maintenance of those who meet with economic misfortune. The Chinese family system is entirely different from our own, and largely nullifies that keener sense of initiative and personal responsibility necessarily attaching to the position of the family head in America. In fact, the Oriental family system involves the concept of mutual protection, and thus in a sense takes the place of insurance. Moreover, the status of women in China is essentially different from that prevailing here. Women hold a subordinate position in the family, and as a rule would not or could not suggest the taking of insurance. And in any case (so often is the reasoning of the family head) what is the need of life insurance when the widow and children will be taken care of by other members of the family group.

To these important difficulties a number of others should be added. China is a large country with a lamentable lack of communication. The insurance business is therefore concentrated within a comparatively few centers, thus denying to companies the advantages of a wide-spread distribution of risk. There is also a great confusion of currencies throughout China. Moreover, there is no well-developed and adequate medical service upon which the companies may depend. There is also the greatest difficulty connected with the investigations of applications and the prompt settlement of claims. These are only some of the difficulties that life insurance in China is obliged to face. There is no disposition to paint too dark a picture, yet life insurance men in all the places I visited were frank in outlining the various obstacles referred to. With the advent of more settled economic conditions and the development of the nation's industries and transportation facilities, these obstacles will tend to

diminish. But the process is likely to be a slow one, and life insurance in China can hardly hope to experience the rapid progress that I have outlined for it in Japan.

CASUALTY LINES

Aside from fire, marine, and life insurance, comparatively little progress has thus far been made in Japan or China in other leading forms of insurance, such as accident and health insurance, the various forms of automobile coverage, compensation insurance, public liability insurance, fidelity bonding, burglary insurance, and boiler and engine insurance. These forms of insurance are being discussed, but the volume of business actually written is as yet surprisingly small.

Accident insurance had its start in Japan in 1911. Only a few companies, however, are now engaged in that type of business and the last issue of the Japan Year Book states that "so far the service has failed to achieve any particular success". According to the latest published figures (those for 1925) the number of outstanding accident contracts was only 17,942 with an indicated face value of 38,078,363 yen. For fidelity, automobile, liability, burglary, and boiler and engine insurance, the number of outstanding contracts for 1924, as summarized by the 1927 Japan Year Book was only 41,356 with a reported value of 20,855,000 yen. As regards China there are no figures available, but it is certain that these forms of insurance are relatively insignificant as compared with the aforementioned three major types of insurance. Incidentally, one may wonder why the several automobile insurance coverages, so important in this country, have progressed so slightly in the Orient. Yet even in Japan, where modern transportation is making such rapid strides, there are probably not more than 50,000 automobiles in use. Japan is now in the stage of the bicycle, some four to five million being in use, and may well be described as a bicyclized nation in contrast to the motorized United States.

FIDELITY BONDING

In view of the rapid growth and present importance of fidelity bonding in the United States, the absence of that type of insurance protection throughout the Orient was to me a subject of

profound interest. And my surprise was all the greater because of the well-known disadvantages connected with personal suretyship. In nearly every center I happened to visit—in Japan, China, Manchuria and Korea—insurance leaders called my attention to the unfortunate reliance placed upon personal surety. Not infrequently, also prominent business men, often called upon to guarantee the fidelity of relatives and friends, referred in conversation to their serious dilemma and lamented the absence of insurance carriers. As far as I could ascertain only one company in Japan writes fidelity bonds, and its manager explained that the premium income was only about \$100,000 and the company's struggle for growth in this type of business was a more or less disheartening one. Time upon time I was asked to speak before business organizations on the subject of fidelity bonding and the practice prevailing in the United States. A change is clearly desired by the thinking minority. It is only a question of time when social customs in the Orient favorable to personal surety will begin to break down rapidly and thus allow corporate fidelity bonding to assert itself.

The reasons for the present situation are exceedingly interesting. They find their basis in the Oriental family system which involves to an unusual degree the idea of sacrifice. The guarantor—a father, brother, uncle or some other member of the family—is glad to sacrifice himself to his family. The same spirit is also extended to close friends. The family honor is high, and if the guarantor fails to pay, then another family member assumes the responsibility. In brief, there is a close family feeling of mutual helpfulness as well as of mutual responsibility in the event of trouble. To this there should be added the prevalent feeling, often expressed to me in the course of conversation, that the suggestion of corporate bonding is apt to be regarded as a reflection upon personal trustworthiness.

Personal suretyship is almost universally insisted upon in Oriental countries and it is interesting to note that as a general rule, particularly in Japan, there is no limit to the guarantee. With the guarantor of such high quality there has been little disposition on the part of employers to seek and to pay for corporate bonds. And even when corporate fidelity bonds are issued, I was told that the insurance company usually requests that the employee also provide himself with a personal guarantor

from whom, if possible, the insurance company may, by way of subrogation, reimburse itself in the event of loss. Sometimes a system of double surety is used, as for example, a first \$1,000 guarantee from the insurance company, and a further guarantee for an additional amount from a personal guarantor, with the understanding however, that the insurance company may endeavor to reimburse itself from the personal guarantor for its share of the loss.

Prior to the World War, losses under personal bonds were comparatively small. In recent years, however, the losses have been much larger, and with this changing situation there has also occurred gradually a change in the viewpoint of both employer and guarantor. Guarantors are becoming more and more afraid of assuming such a personal liability, and wish also more and more to be freed from what many regard as a nuisance. As already stated, a change is desired by the thinking minority. The family concept with respect to personal surety will tend to break down more and more, just as it is changing with reference to life insurance. The straightforward business point of view is bound to prevail before long, and it is only a matter of education, which has already been started, to effect a change among a people who have already shown their genius at adaptation in so many other business lines.

The comparative unimportance of casualty insurance in the Orient, as judged by volume of business now transacted, must not be considered as indicating an unimportant future. Instead, I found the keenest interest displayed by insurance men in both Japan and China in what America is doing along the leading casualty lines. From their standpoint these lines of coverage simply represent the *new*, as contrasted with the older lines of fire, marine and life insurance, and what is new in Japan and China today is very likely to become well-established within a decade or two, especially among the Japanese, owing to their remarkable genius for adaptation. Japanese and Chinese students of insurance—actuaries, company representatives, and post-graduate students—are coming to us in rapidly increasing numbers to observe what we are doing by way of accident and health insurance, the incorporation of disability benefits in life insurance contracts, group life insurance for industrial plants, and life conservation and accident prevention work on the part of

insurance carriers. We may be sure that their observations are carefully made and that the best we can offer, by way of method and of usefulness to the community, will soon be adopted by them to their nation's needs. And in Japan the movement will be hastened greatly by the compulsory system of insurance education to which I have already referred.

LIVESTOCK INSURANCE

BY

W. A. SWAIN*

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Company

Although live stock insurance has been written both in the United States and in European countries for a number of years, this form of protection is still in somewhat of an experimental stage, and in all probability will always remain in that condition to a greater or less degree, due to the continued and frequent changes in live stock conditions.

During its earlier history in the United States, practically all live stock insurance was written on draft horses, consisting of farm work horses, and breeding stock, but with the advent of the tractor, the farm horse values dropped to comparatively nothing, and with them went the values on pure-bred draft stallions and brood mares, resulting in the loss of nearly all of this source of revenue to the companies writing this class of business.

Then came the World War, which was responsible for peak prices on cattle and hogs. Vast sums of money were invested in herds of cattle and hogs. It was an every-day occurrence for single animals to sell at public vendure and private treaty for sums running into thousands of dollars, thereby opening up a new field for live stock insurance companies.

With the close of the War, American breeders found themselves with a vast surplus of breeding stock on hand, both cattle and hogs, resulting in an almost over-night slump in values of from fifty to eighty per cent. of their former worth, which automatically wiped out practically the entire demand for insurance on cattle and hogs for the time being, and at the same time created an abnormal and extreme moral hazard in a great many cases.

Just at this period came renewed interest in fancy saddle and show horses. Society interested itself in fancy show horses and horse shows sprung up all over the country. Horseback riding, especially about the larger centers of population came to be a popular fad. This brought about an unusual demand for fancy hunters and jumpers, hackneys, saddle horses, etc. In fact, I think values of saddle horses at the present time are greater than

*This paper presented by invitation of the Committee on Program.

have ever been known in the history of the United States. Here again was a new field for live stock insurance with new problems for the live stock underwriter to work out and solve.

At the present time, running horses are more popular than ever before in our history. Palatial new race tracks are being built at various points. Many states are making provision by legislation for legalized racing, etc. What changes the future will bring forth may only be surmised.

It should not be difficult to understand from the foregoing that a thorough and practical knowledge of live stock in all its phases, as well as a general knowledge of the insurance business is essential to the intelligent and successful underwriting of live stock insurance.

The physical conditions surrounding a given risk, located in the State of Illinois, as an illustration, may be entirely different when the same risk is located in some other state or section of the country. Consideration must be given to climate and feed conditions as they exist in various states, as well as epidemic diseases, peculiar to particular localities, in addition to the immediate physical and moral conditions surrounding any given risk. It is not possible to lay down any set of rules to be followed in underwriting live stock insurance. Each risk presents a separate and distinct problem, and must be considered on its own merits, taking into consideration the physical hazards, peculiar to the particular risks, the moral hazard, insurable value, etc. This can only be done intelligently by one having a thorough and practical knowledge of all branches of the live stock industry.

The live stock mortality policy provides protection against loss resulting only from death of insured animals; provision being made for destruction under certain conditions for humane considerations, but no attempt is made under this form of coverage to guarantee values or performance. To illustrate, an animal may be insured for a certain sum, based on the fact that it is a prize-winning saddle horse of quality. After the policy has been issued something may happen to prevent its use for saddle purposes, and seriously impair its value, but there is no liability because the policy pays only in the event of death.

The mortality policy is term life insurance applied to animals, the policy being written for periods of twelve months or less. There are two forms of mortality policy, one covering at a

specific location, adapted to insuring commercial dairy cattle, farm work horses and breeding herds of either pure-bred or grade cattle and horses on the farm. The other form is called a full floater, full mortality policy, covering anywhere in the United States, and Canada, including while in transit by rail, ferry transportation, or properly equipped motor truck, in accordance with the requirements of the policy. This form is used for insuring race horses, show horses and other classes which require a floater form of coverage.

There are also limited contracts providing protection against loss resulting from fire, lightning and transportation, and from fire, lightning, transportation and accidental death, meaning death resulting from external, accidental and violent means only.

Trip transit insurance is another form of contract providing protection against loss of insured animals while in the hands of transportation companies. There are two forms of trip transit insurance, one of which protects against loss by death from any cause during transportation, and the other against loss resulting only from fire, derailment and collision.

There are no actuarial tables on domestic animals as there are for the human family to guide the underwriter in arriving at the proper rate on a given class. Rates in the beginning, therefore, were arbitrarily fixed, being raised or lowered as required in accordance with the companies' experience, until now live stock rates may be termed experience ratings, but in a general way, as near as possible, they are based on the normal average mortality of each breed.

As an illustration, the average length of life of what is termed the finer breeds of horses, comprising the thoroughbred (runners), standard-bred (trotters and pacers), etc., is much longer than the average life of the draft-bred horse, comprising the Percheron, Shire, Belgian, etc. A somewhat higher rate on draft than on light horses must, therefore, be applied.

While beef-bred cattle, comprising the Hereford, Aberdeen-Angus, Shorthorns, etc., live on the average approximately as long as dairy-bred cattle, comprising Jersey, Guernsey, Holsteins, etc., there are certain physical conditions surrounding dairy cattle in the present day and age which cause the normal loss on dairy cattle to run slightly higher than on the beef breeds. Among other things I refer particularly to the practice of forcing milk

and butter-fat production. This condition necessitates applying a slightly higher rate on dairy cattle than on beef cattle.

It has been clearly demonstrated that there are certain classes which cannot be insured under a mortality contract with any possibility of breaking even or making a small profit at anything short of a prohibitive rate.

New conditions with respect to all of the different classes which are insured at the present time are continually developing, necessitating constant vigilance on the part of companies writing this class of insurance, and making necessary frequent changes in their plans for underwriting, and the rates to be applied.

There is a great deal more which might well be said on this subject, but I believe what has already been said will serve to give you some idea of the objects and aims of live stock policies, and I shall, therefore, refrain from taking up any more of your valuable time, except to add that, all things considered, there can be no doubt but that live stock insurance in all of its branches is one of, if not the, most extremely hazardous forms of protection attempted by insurance companies at the present time, and in all probability is destined to always remain as such.

In conclusion, I desire to express my appreciation for the privilege of presenting this paper to your august body. May I be permitted to express the hope that the subject matter will be found of interest.

ABSTRACT OF THE DISCUSSION OF PAPERS READ AT THE PREVIOUS MEETING

THE FUNCTIONS AND PLACE OF THE STATISTICAL DEPARTMENT
IN A MULTIPLE LINE CASUALTY COMPANY—JOSEPH LINDER
VOL. XIV, PAGE 27

WRITTEN DISCUSSION

MR. ALBERT E. WILKINSON:

One cannot read Mr. Linder's paper without a feeling of disappointment that none of the practical problems relating to the gathering, analyzing and compiling of statistical data have been touched upon. The paper presents some valuable suggestions to the prospective organizer or efficiency expert and I understand that there are some, perhaps very few, companies whose chief executives might do well to give serious consideration to this subject, although Mr. Linder states that "it is no longer necessary to argue that statistics represent the fundamental basis of good insurance management." The author has proven his case for a statistical department in the organization of a multiple line casualty company, and I believe his argument might apply with equal force to any casualty company.

We read "For the most part the mechanism seems to have had an evolutionary growth . . . rather than by any formulated plan." Here the author has pronounced himself a fundamentalist with regard to insurance organization. Is it desirable that in its initial organization every insurance company should be equipped with a statistical unit functioning as an independent department in its responsibility to the management? The question of placing the responsibility for the various duties pertaining to statistical analysis is surely an internal one and is bound to develop with the growth of the company.

Mr. Linder treats this aspect of his subject fairly when he says that in every company a statistical nucleus should be created though it may not at first have the status of a coordinate department.

The degree of importance given to the statistical unit of an insurance company is in large measure dependent upon the

extent to which its chief executives are endowed with minds for analytical analysis. Companies whose chief executives have risen from the rank of actuary will be foremost in recognizing the high value of the statistical department and in developing it to its highest degree of efficiency. No matter how disinterested insurance executives may be in the matter of statistics, there are few companies that do not feel the compelling influence of insurance departments and kindred bodies, and sooner or later find that a statistical department is the logical answer.

The author has given us a bird's eye view of the basic or major operations of a casualty company and has pointed out how some of their collateral functions have to do with statistical analysis. He has indicated very clearly and concisely the principal requirements of the various units for such analytical data as will assist them in the proper functioning of their own departments. He has called attention to the fact that special investigations of an analytical nature must be carried on from time to time and that executives must be furnished with data for the purpose of administrative control. He has also made brief reference to the very large and increasing amount of detail demanded by the various state boards and bureaus.

It is not strange, in view of the vast amount of detail made necessary by the complications incident to the proper conduct of a casualty company, that the author impresses upon all concerned the advisability of having an independent department where all of this work may be done and its responsibility centralized.

May we not feel perfectly justified in leaving this matter where it logically belongs, *viz.*: to the good judgment of the executives, upon whom rests the responsibility for developing their respective organizations?

Mr. Linder has made a very intelligent presentation of his subject, a portion of which might well be used as an introduction to what should be a very interesting paper for the Society, *viz.*: The Characteristic Procedure of a well organized Statistical Department in a Multiple Line Casualty Company. It is recognized that only the high spots could be touched upon, otherwise such a paper might well assume the proportions of a text book.

I venture the opinion that the members of this Society are not so much interested in a statistical department *per se* as they would be in a presentation of its most approved methods of procedure.

THE POSITION OF THE REINSURANCE COMPANY IN THE CASUALTY
BUSINESS—WINFIELD W. GREENE
VOL. XIV, PAGE 36

WRITTEN DISCUSSION

MR. H. O. VAN TUYL:

Reinsurance is a topic which ordinarily makes slight appeal to the imagination. Mr. Greene, in his paper, has not only made a contribution to the literature of our proceedings which will be of real value to the student of the subject but he has succeeded in putting flesh on the dry bones of reinsurance facts so that the vital part which reinsurance plays in the distribution of risk becomes clearly apparent.

In the first part of his paper Mr. Greene cites the rapid growth of casualty insurance in this country (1926 premiums being 100 times the 1890 total) and draws attention to the fact that in the decade ending with 1925 the volume of reinsurance premiums increased $2\frac{1}{3}$ times as fast as the growth in net writings. In view of the fact that there were four strictly reinsurance companies in the field in 1925 as compared with one "admitted" reinsurance company in 1915, it is rather surprising to learn that this increase in reinsurance consisted mainly of transactions between direct writing companies and that the proportion of reinsurance written by strictly reinsurance companies had increased very slightly, being only about one-fifth of the total reinsurance volume.

In presenting figures to show the growth of companies transacting reinsurance exclusively it would appear that the premiums ceded to the Munich Reinsurance Co. during 1915 have been omitted. This company was a leading factor in casualty reinsurance prior to 1917. Its withdrawal from the field during the war deprived companies of needed reinsurance facilities and doubtless led to the organization of new companies and a decided increase in cessions to companies then operating. Since the Munich was not authorized in New York State, it is probable that the figures showing reinsurance in force as compiled by the author do not include any premiums ceded to that company. If the premiums ceded to the Munich in 1915 were added to the premiums ceded to the one admitted company, the total reinsurance ceded to reinsurance companies in 1915 might be found to have been *relatively* greater than in 1925. This would afford still

greater justification for the opinion expressed in this paper that casualty reinsurance companies have not fully realized their opportunity.

The list of reinsurance arrangements now in current use as described by the author is a commentary on the demand for some method of distributing losses so as to prevent excessive financial shock. We are inclined to agree that these methods cannot be equally efficient although the different requirements of the various lines of insurance which have brought about their use will doubtless continue to exert an influence toward diversity of practice. The association formed by workmen's compensation insurance carriers for the purpose of sharing catastrophe losses is a unique example of a form of reinsurance which is extremely simple and yet fully effective.

Mr. Greene's paper, deals primarily with the function of the reinsurance company and he is rather inclined to characterize facultative reinsurance among direct writing companies as a "swapping contest." The individual submission and acceptance of reinsurance on particular risks is likened to the "stone age" in the development of reinsurance and the use of the open treaty as an intermediate epoch. The fixed treaty with a reinsurance company providing definitely for the cession of agreed portions of all risks coming within the limits of the treaty is held up as the goal. There is no denying the utility of the fixed treaty and Mr. Greene ably demonstrates the numerous advantages of this method of reinsurance. The actual practice of reinsurance companies is well illustrated by accounting and bordereau forms which are shown and the uses of which are described in detail.

The suggestion is made that when a fixed treaty is in force the use of a detailed bordereau list can be eliminated and that a summary or tabulator list be furnished instead. This proposal is very interesting but there is a question as to whether this will result in a real saving of effort. It is true that at the present time the preparation of a bordereau with numerous columns involves considerable clerical labor. However, in the past both the reinsurer and the ceding company have required an analysis of the premiums ceded and cancelled by terms and expiration for premium reserve purposes, by policy year for liability and compensation loss reserves and by location of risk by states for tax purposes. Some companies also desire an analysis by agents of

premiums reinsured. Because of these demands it is essential that individual statistical records be prepared for each item whether a bordereau is prepared or not. The question then is whether the typing of a bordereau or list of reinsured items is not the simplest way of arranging the data for the punching of cards. If, however, the names and precise locations of assureds are not required by the reinsuring company, a tabulator list made direct from the punch cards might serve every purpose as well as a bordereau.

In fixed treaty reinsurance, the cession of risks is automatic and correspondence regarding risks and losses is cut to the minimum. In view of the economy of effort and other inherent advantages of this system it is rather remarkable that it has not been adopted more generally. The author expresses the conviction that the reinsurance company has an important function to fill in the realm of casualty insurance and he outlines a program whereby through fixed treaty arrangements it would occupy a much larger place in the reinsurance field than holds true at the present time.

As a part of a complete reinsurance program, Mr. Greene suggests that reinsurance companies effect retrocessional arrangements with direct writing companies. This is desirable since credit cannot be allowed by the various state departments for retrocessions to unauthorized foreign companies and the use of American direct writing companies for this purpose affords a solution of this problem. The novelty of this suggestion, however, is such that it will require time for the general acceptance of the proposal. Yet in no line of insurance is it so true as in casualty that "the world moves."

AUTHOR'S REVIEW OF DISCUSSION

MR. WINFIELD W. GREENE:

Mr. Van Tuyl is right in his conclusion that the figures as to casualty reinsurance in 1915 as shown in this paper relate only to "admitted" (that is, admitted to New York State) reinsurance and, therefore, take no account of the Munich Reinsurance Company. As he states, it is possible that in 1915 a greater proportion of casualty reinsurance premiums went to strictly reinsurance companies, than in the year 1925.

In connection with the relative volume of reinsurance going to direct-writing companies and to reinsurance companies, the following may be of interest.

In 1927, direct-writing stock casualty companies doing business in the United States enjoyed a net premium income of at least \$750,000,000. The indication is that the reinsurance premiums ceded by these same companies during that year were at least \$60,000,000, omitting such premiums ceded to reinsurers not admitted to the United States. The combined premium income of all stock casualty reinsurance companies admitted to the United States in 1927 was only \$18,434,000 including considerable revenue from sources other than stock casualty companies. It is, therefore, apparent that last year, the stock companies placed about three-fourths of their reinsurance with other direct-writing companies and only one-fourth with reinsurance companies.

On the point of the elimination of bordereaux, it is a fact that in many cases, such a step has been found to be an actual economy. Needless to say, bordereaux can be eliminated only where the treaty is "fixed" to such a degree that the reinsurer's liability may be determined from the treaty provisions alone without regard to the peculiarities of the individual policy. In doing away with bordereaux, it is needful to outline a reporting procedure which will care for the statistical requirements mentioned by Mr. Van Tuyl. This step frequently requires some study on the part of the reinsurance company in co-operation with the officials of the direct-writing company. The present indication is that through such investigations, substantial further economies remain to be accomplished.

HAS THE INDUSTRIAL ACCIDENT RATE DECLINED SINCE
1913?—LEWIS A. DEBLOIS
VOL. XIV., PAGE 84

WRITTEN DISCUSSION

MR. CHARLES N. YOUNG:

Mr. DeBlois' analysis of the limitations of our statistical sources provides ample warning against rash attempts to generalize from insufficient data. However, his use of United States Census statistics for the Registration Area and his caution in

drawing conclusions are ample evidence that he has heeded this warning.

It is of interest to note the downward trend of the accident mortality rate of Figure No. 1, even during the twelve years ending with 1912. The dependence of these curves upon the business cycle is clearly evidenced, and had it not been for the marked depressions of 1908 and 1921, the slope of all three curves would be appreciably reduced. However, the panic of 1907 will not account for the average saving of more than two hundred lives annually during the first twelve year period. Probably the answer is found in the pioneer efforts of the steel and railroad industries rather than in the somewhat inchoate realization on the part of the rest of us that "something ought to be done" to check the rising tide of accidents. It may be said that no such thing as a "safety movement" was in existence at that time.

But in 1912 something happened. That year saw the beginning of what is now the National Safety Council. The following year marked the beginnings of compensation laws—the greatest single factor in establishing safety on a sound economic basis. Profiting by the early experience of railroad and steel industries, the Universal Analytic Schedule and all of its successors recognized the power of organized effort by a credit on the rate. It took and is yet taking years for the safety consciousness to filter through the industrial fabric to the man on the job. But organized safety now has attained the status of a recognized human institution.

Let us turn the chart of Figure No. 1 upside down and view the developments of the last twelve years as the growth of a human institution. Mr. DeBlois, in the interests of simplification, has shown a linear trend. He points out that a projection of the twenty-four year trend would bring the millenium of no accidental deaths in A. D. 2065, only to brush the suggestion aside as "absurd since the rate does not and never will follow a straight line." Other attempts to describe human progress mathematically have variously resulted in sine waves, ascending spirals or some other form depending as much on the optimism or pessimism of the sponsor as upon his mathematical ingenuity. A former guest speaker of this Society, Count Alfred Korzybski, has developed the thesis that the growth of human institutions

is best represented by the compound interest law.* It may be worth while to test the safety movement by that law.

Trend B (1900-1912) intercepts the year 1912 at $Y = 81.669$, which we have taken as our starting point. The annual decrement of .236, established by twelve years experience has been assumed to continue unchanged—at least, a more probable assumption than that it suddenly disappeared. Using then the formula for the summation of one per year at interest i , we have:

$$S_{\bar{n}|i} = \frac{(1+i)^n - 1}{i}$$

where $n = 12$ and i is the annual rate of increment to be determined. The trend A intercepts the year 1924 at $Y = 73.796$. Subtracting this from 81.669 we obtain 7.873 as a conservative estimate of the gain for the twelve-year period under consideration. Substituting in the above equation, we find the annual rate of increment to be 17.3%. Substituting this value again and solving for n :

$$\frac{(1.173)^n - 1}{.173} = 81.669$$

we have $n = 38.6$. This means that if the law of growth applicable to the first twelve years of organized safety continues to apply with undiminished vigor in the future, we may reach the millenium of no accidental deaths in 1951! At least, this is an interesting confirmation of the views of Mr. Benjamin Kidd as to the possibilities of changing the thinking of a nation within a single generation.†

Improbable as is the realization of such a sanguine suggestion, it may be worth while to examine some of the factors which are likely to prevent its fulfillment, either in A. D. 1951 or 2065.

1. Lack of faith by safety engineers themselves that an approach to that goal is possible, and that the adjustments necessary to attain it are infinitely worth while. If they do not believe mightily in their mission they will most certainly fail to sell it to an indifferent world.

2. The possibility that safety work may fail to attract a sufficient number of men having the right combination of salesmanship, executive ability, technical training and engineering experience. This will certainly happen if the

*Manhood of Humanity.

†The Science of Power.

responsibility, the power which is linked thereto, or the financial reward is less for this than for other work requiring a similar combination of qualities. Closely allied to this aspect of the problem is the possibility too often demonstrated in the past, that men well qualified and of long experience in safety may abandon it at a time when their leadership would be of greater actual value than it could possibly be in any other field.

3. The time lag between the application of new industrial processes, means of transportation, etc., and the growth of an appreciation of the hazards thereby introduced. It appears probable that the pioneer spirit of invention and discovery will always result in some cost of human life. However, this only emphasizes the fact that the counsel of the safety man should be sought and his approval obtained in advance of inaugurating such changes.

Regardless of these and many other factors which may postpone indefinitely the era of no accidental deaths, it is clear that progress is being made, at least among the plants which are large enough to realize that insurance distributes but does not eliminate loss, and that the indirect loss not borne by insurance may be several times the direct cost. One of the most encouraging features of the safety movement is the splendid example of those plants which have made long-continued operation without accidents a reality. They have shown that "it can be done," and the story of that achievement may well be made the central message of the safety gospel. The Society is to be congratulated upon having the facts presented by one who, as the responsible head of the safety activities in one of our largest industrial corporations, has succeeded in no small measure in bringing to pass the things which justify his cautious affirmative to the question under discussion.

PREMIUMS AND RESERVES FOR DEFERRED PAYMENT PROTECTION—

JOHN M. POWELL

VOL. XIV., PAGE 64

WRITTEN DISCUSSION

MR. ARMAND SOMMER:

Mr. Powell's paper very adequately covers the technical background of the rating and rating factors.

In computing rates on deferred payment insurance we are

dealing with a subject, which even more than most insurance rating, combines the mathematical and actuarial rating with the judgment factors that must temper the rate. Mr. Powell has wisely left out several minor refinements which from a strictly technical standpoint might be considered essential, but it would be fool-hardy to consider the exact mathematical factors when we are, to a great extent, purely estimating the class of risk that we are writing. We have taken the ordinary classification as applying, but for all we know, the medium class or possibly the extra preferred class would more nearly be justifiable.

Mr. Powell has arbitrarily loaded the rates for the unusual features of deferred payment insurance as compared to the coverage from which the rate making data were obtained. This loading should by all means be imposed and if anything the loading should be increased as there are many trends and tendencies that will reflect against the company.

The moral hazard of deferred payment insurance is not at the present time important, but as the coverage becomes wide spread we can imagine characteristics and circumstances which might involve a moral hazard. The coverage deals with three parties in a basic two party coverage in that the insurance is taken out by the creditor and, although the benefits are payable to the creditor, he in turn gives the debtor the claim payment. Indirectly this procedure might contribute a small amount of pressure on the part of the assured toward the payment of doubtful claims. In theory deferred payment insurance is given to mitigate the financial loss of a man who has mortgaged his future income and thus is economically sound and is added on the purchase price or absorbed by the seller the same as taxes or other expenses. In practice however, deferred payment insurance is taken by the assured or seller of the article with the main thought in view of increasing his sales and giving his salesman an additional talking point. We can rather shudder with fear when we think of the household appliance salesmen or other specialty salesmen using an insurance policy as part of his selling talk. The coverage will certainly not be understood by the buyer of the article and this too will play its small part in the adverse experience of this type of insurance.

We could enumerate many more peculiarities of deferred payment insurance, all of which will result unfavorably to the com-

pany. The physical condition of the risk insured will be far from the normal of the basic data, and even the 5% loading of Mr. Powell's rate may not offset the lack of selection of the risk.

The whole thought behind this brief discussion is that we should go slowly and conservatively on deferred payment insurance. Each particular risk should be analyzed carefully with the idea in view that any special hazard or condition of the risk must require an additional rate.

INFORMAL DISCUSSION

THE LIFE INDEMNITY CLAUSE IN PERSONAL ACCIDENT POLICIES

BY

JOHN M. LAIRD

A SIGNIFICANT CLAIM

Recently a dentist who claimed that he was earning \$40,000 a year secured disability benefits aggregating \$30,000 a year in several companies under commercial accident insurance and permanent total disability with life insurance. His right hand got caught in a taxicab door and his index finger was amputated. He claims that he is totally disabled. He is unable to continue as a dentist but has entered the real-estate business and may be able to earn as much as he actually earned as a dentist. In this particular case, there may be a question of fraud as he evidently overstated his earnings. Apart from the element of fraud, should the insurance companies pay him an income for this trivial injury which prevents him from continuing as a dentist but permits him to earn a good income as a "realtor"? Should the policies define total disability as inability to perform the duties of *his* occupation or as inability to perform the duties of *any* occupation?

THE TREND IN COMMERCIAL ACCIDENT INSURANCE

One purpose of accident insurance is to provide weekly indemnity for loss of income resulting from an accident. Full indemnity is paid for total disability. At first such payments were limited to 52 weeks or 100 weeks but on the most liberal policies issued since about 1910 the income is payable as long as total disability continues—even for life. This benefit is not paid for pain or suffering or inconvenience but rather for complete loss of business time—that is, inability to work. According to the policy language in use for over 15 years, the life indemnity is paid if the accidental injuries "prevent the Insured from performing any and every duty pertaining to *his* occupation." In recent months there has been a movement to change the language to provide indemnity for 52 weeks if the injuries "prevent the Insured from performing any and every duty pertaining to *his* occupation" and after 52 weeks if such injuries "prevent him from

engaging in *any* occupation." What has led to this change in language after 15 years of experience? How does the new language affect the policyholder?

WHAT IS "*HIS* OCCUPATION"?

Let us first consider the expression "*his* occupation." Does this mean the occupation when the insurance is issued or when the injury occurs or when the indemnity payment falls due? Each policy recognizes that a change of occupation may take place after issuance and there is a suitable pro rate provision for adjusting the benefits accordingly. In the early days of accident insurance, it was understood that benefits would be based on the occupation at the due date of each payment.

Let us assume that a man secures a policy when classified as a "clerk in store," then changes his occupation to barber and injures his right hand in such a way that he is totally unable to work as a barber. He immediately becomes entitled to benefits under the classification "barber." After drawing indemnity for several weeks, he begins to earn a good income as a salesman. According to the old interpretation of "*his* occupation," he would thereupon cease to draw benefits. That was undoubtedly the intent of the insurance companies when they first used the expression "*his* occupation."

The courts, however, gradually took the view that "*his* occupation" referred to the occupation when the injury was sustained and that under this language even though the policyholder might after the injury enter some other occupation and earn a substantial income, that would not debar him from receiving weekly indemnity. This change in the interpretation of "*his* occupation" did not alarm the accident companies. The question arose in only a few cases and the number of prolonged claims was small.

LIFE INDEMNITY

When the indemnity period was increased from 104 weeks to "life," it was looked upon as a talking-point rather than as a substantial benefit. Most people felt that any policyholder who sustained severe injuries would not live to draw benefits much beyond 100 weeks. In one large company several years after this life indemnity was introduced, they had only 4 claims running more than 100 weeks. Soon, however, there was a rapid

increase in the number of these long claims. Apparently policyholders were just beginning to realize the possibilities of such a benefit. This education of the insuring public may be ascribed partly to the spread of accident and health insurance and partly to the introduction of new forms of insurance such as (1) workmen's compensation, (2) permanent total disability with life insurance, and (3) non-cancelable sickness insurance.

CLAIM RESERVE

If disability is caused by injury to the hand, the life of the Insured is not thereby shortened. A claim reserve should therefore be set aside on the basis of a normal lifetime by the American Experience Table or even the American Men Table. On a policy of \$100 a week, if the Insured is under age 35, this means a claim liability of about \$100,000.

"HIS OCCUPATION" VS. "ANY OCCUPATION"

Under permanent total disability with life insurance and under non-cancelable sickness insurance, it has been customary to provide a benefit in case of total disability defined as "inability to engage in *any* occupation." With the greater sale of these benefits with emphasis on the non-cancelable feature, salesmen of commercial accident insurance naturally began to emphasize the points in which their policies appeared more liberal—for instance, using the expression "*his* occupation" rather than "*any* occupation." This led such salesmen to tell clients that under a commercial accident policy the injury need not produce total incapacity to work but that the policyholder could draw benefits if some trivial injury prevented him from continuing his regular occupation.

What is, then, the distinction between "*his* occupation" and "*any* occupation?" If a surgeon loses his right hand or even a few fingers, he can no longer work as a surgeon but he may become a successful salesman or lecturer. Is it desirable that he should draw \$200 a week for inability to continue as a surgeon, if he is actually earning \$300 a week as a salesman?

The purpose of this insurance is to indemnify for loss of earning power. If, therefore, the policyholder is able to earn a good living in some other suitable occupation, the indemnity should cease. The premium should be large enough to cover incapacity

to work but it should not be increased in order to provide an income for the man who merely changes his occupation. This holds even where the policyholder has acted in good faith.

The situation is much more acute in the case of a fraudulent claimant, particularly if he is over-insured. Insurance companies should not encourage anyone to secure a large policy, incur an injury and draw an income for life if he is actually still able to earn a living. Certainly they should not pay such an income where the claimant has taken up another occupation and is earning as much as he did before the injury.

These are some of the reasons which have led accident companies to change from "*his* occupation" to "*any* occupation" after 52 weeks. In one respect the policy might be more salable if it did not mention "*his* occupation" but called for "*any* occupation" throughout the entire period of disability. The change from "*his* occupation" to "*any* occupation" after 52 weeks suggests a curtailment of coverage at the end of one year. The purpose of this clause is of course to give the man one year in which to get started in a new occupation.

With the best type of risks, in most cases the difference in language actually makes no difference in the coverage. If a bank president is so seriously injured that he cannot work as a banker, he is entitled to full benefits under either "*his* occupation" or "*any* occupation."

The settlement of a claim depends on (1) the policy language, (2) Court decisions, and (3) Company practice and standards. In interpreting the expression "*any* occupation," the trend is towards holding that the policyholder is entitled to indemnity if he is so disabled as to be prevented from following the occupation engaged in at the time of injury or any other occupation for which he is fitted by temperament, training, education and experience. The benefits are not denied to a business executive on the ground that he is able to keep a newspaper stand or run a lawn-mower. On the other hand, benefits are not denied to a farmer on the ground that while his injury prevents him from engaging in manual labor it would not prevent him from conducting a law practice if he had the ability and training. This question is fully discussed by Mr. Wendell M. Strong in a paper on disability benefits in the "Transactions" of the Actuarial Society, Volume 26, page 375.

Under permanent total disability with life insurance, companies have almost invariably used the expression "*any* occupation." One or two have recently changed to "*his* occupation" on the theory that most claims allowed under one definition would be allowed under the other and they might as well get credit for the broader coverage implied in "*his* occupation." Apparently they do not share the feeling that this opens the door to payment of fraudulent claims.

Accident companies, on the other hand, after more than 15 years of experience with the expression "*his* occupation" are now turning to "*any* occupation." They are satisfied that his expression more nearly conforms to the purpose of the insurance. It works no hardship on the legitimate claimant who is unable to earn a living and it permits continuance of the complete coverage at the minimum premium.

Insurance companies should guard against abuse of the life indemnity provision. Not only should we try to prevent malingering but we should also encourage the claimant to secure proper medical and surgical treatment. In the best interests of the man himself, we should seek a speedy and complete recovery. Certainly we should not allow him to make a financial profit by drawing life indemnity while he is actually earning a good income in a new occupation. One way to safeguard the benefit and guarantee that the honest policyholder will receive full value for his premium is to cover only inability to perform the duties of "*any* occupation."

WHAT SHALL BE THE FUTURE OF SCHEDULE RATING WORKMEN'S COMPENSATION RISKS?

BY

WILLIAM G. LUTZ*

Chief Engineer, New York Compensation Inspection Rating Board

From the time when the Workmen's Compensation Act was first enacted, we have had one form or other of schedule rating, forming a part of the merit rating scheme, the remainder of which has been made up by the experience rating plan. Schedule rating may briefly be defined as a plan for determining adjusted rates from inspection reports based on standards which are set forth in the Schedule and certain formulae and factors.

*By invitation of the Committee on Program.

Experience rating is a plan for modifying manual or schedule rates, taking account of payrolls and losses which have been developed over the experience period and calculated from the experience rating formulae.

The original or Analytic Schedule and the 1916 and 1918 revisions were plans imposing penalties and granting credits for the primary purpose of promoting safeguarding of hazards. They had little or no statistical foundation and were, therefore, accident prevention schedules and not rating schedules in the true sense of the term. Since the 1923 revision we have had a statistical and rating schedule which has not only evaluated the hazard by taking account of standard safeguarding but has also operated to refine classification by comparing the hazard of machine operations of the individual risk with those of the average risk in the classification.

In presenting my views with respect to schedule rating, I will first attempt to establish that schedule rating has been and should continue to be an essential part of any scheme of merit rating workmen's compensation risks. I shall build from that indefinite base from which we have worked recently in connection with the revised plan of assessing premiums, namely, that compensation risks generally may be divided into two classes—large risks and small risks. These terms are indefinite and no attempt will be made to define them by drawing an arbitrary line with respect either to annual payroll, annual earned premium, or both. Our recent study of the small and large risk problem has disclosed that in New York State at least, the small risk within a particular classification is generally worse than the large risk in the same industry. To determine an explanation for this presents in itself a field for an extended discussion. On the one side we have the increased mechanization which characterizes the large risk and which at first glance appears to make such risk the more hazardous. On the other side, the outlook toward accident prevention and general welfare of employees, on the part of those responsible for the affairs of the large risks, is so much more advanced that this influence is indicated as more than counterbalancing the effect of increased mechanization.

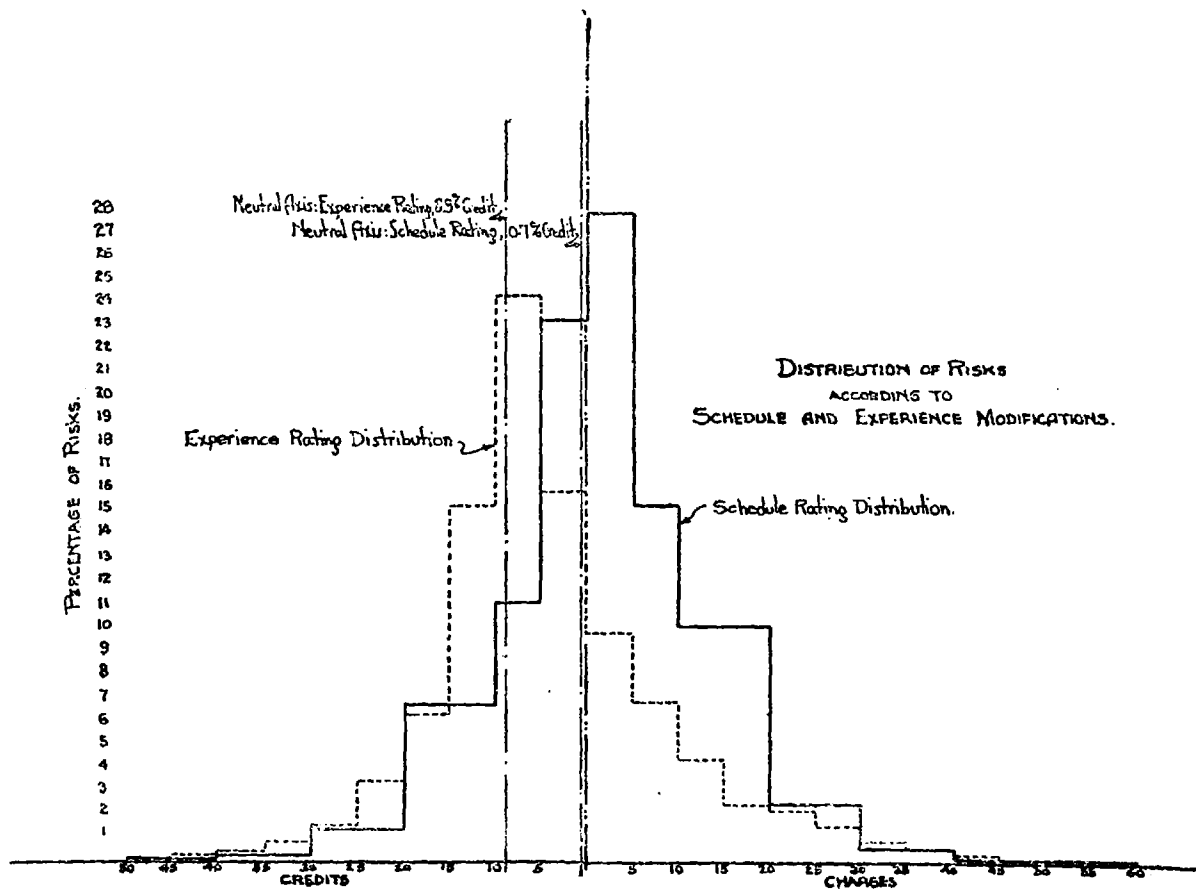
Small risks may be described as being in various stages of development as respects methods and machinery to the state of maximum mechanization which characterizes large risks.

Variations in hazard of small risks are principally in process and machinery. In large risks the principal variable is a composite reflecting the intelligence of the average worker and his general environment and satisfaction at work and at home, all of which are to a considerable degree in the control of the employer and constitute the intangible element designated as the morale of the risk. If these premises are accepted, we come at once to the conclusion that schedule rating is required to differentiate the physical variations in small risks, and an experience rating plan to evaluate the less perceptible differences in large risks. Schedule rating is required for the large risk as well as for the small since the standard of comparison is the risk of average hazard, corresponding to the manual rate, and as a rule it is safe to say that the risk of average size is a risk of average hazard. Where self rating is provided for in experience rating, schedule rating may be eliminated in the rating of risks so qualifying and possibly also to risks whose experience credibility lies beyond the point of departure from the normal credibility curve. In the final analysis, the minimum qualification and a possible maximum qualification for schedule rating, hinging on credibility factor for experience rating, are matters of judgment to the same extent as determination of minimum qualification for experience rating.

Schedule rating and experience rating are necessary integral parts of the merit scheme much in the same way as low gear and high gear are essential parts in the transmission of power from the gasoline engine of a motor car. Unfortunately, this point does not seem to be generally recognized. To continue the simile, the advocates of a merit rating scheme confined to experience rating, would like to have the car in high gear all of the time. There are some who desire the elimination of schedule rating, whose belief it is that there is a wider swing in the results of operation of the experience rating plan than in the operation of the schedule rating plan. As a matter of fact, it is probably safe to say that this impression is quite general. The origin of such opinion is rather difficult to fathom, except possibly that those directly in the insurance business, as distinguished from those in rating organizations, have gained the impression from ratings of specific desirable risks developing large payrolls and showing favorable loss ratios. The fact remains, however, that such risks are very much in the minority.

At this point I desire to call attention to a chart indicating among other things that the swing of schedule rating is, for all practical purposes, as wide as that of experience rating. This chart illustrates the distribution of number of risks according to schedule modification and experience modification. It will be noted that each graph builds up from approximately the same broad base to approximately the same pinnacle and that the rising and descending portion of each are remarkably the same. As a matter of fact, the two charts practically coincide if the axis of the schedule modification chart is transposed to the line which represents the schedule modification for the average risk subject to schedule rating, and the axis of the experience modification chart is transposed to the line which represents the experience modification for the average risk subject to experience rating. At first glance we are surprised at the concentration of risks about the neutral point, particularly insofar as the experience modification chart is concerned, but on giving thought to the matter, we realize that if such a picture were not presented by the analysis, and the curve should show a comparatively uniform distribution, we would be forced to the conclusion that there is something radically wrong in connection with the first and foremost essential of rating compensation risks, namely that of classification. As a matter of fact, this chart illustrates studies which might well be made to determine whether particular classifications are not too broad in scope to equitably handle particular industries. Assume, for example, in place of numerous classifications covering operations which are essentially those of a machine shop, we had but one machine manufacturing classification. The chances are that a chart showing the results of experience rating risks in such classification would not only have a wide base but also a wide top and thereby indicate that the classification covered groups of risks ranging widely in hazard. The next step would then be to refine the classification so as to provide separate classifications for sewing machine manufacturing, tool manufacturing, locomotive manufacturing, etc., such as we actually have.

Quite recently the question as to whether schedule rating should be retained or eliminated, has been somewhat briefly discussed. It seems to me that such a discussion should commence with realization of the fact that a schedule is in existence and has been for years. With that fact before us, certain objections to



the scheme must be established, or the proposal does not merit consideration.

First of all we have the question as to whether or not the schedule is a failure as an instrument for measuring the relative hazard of risks in the same classification. In my opinion, the schedule has not been a failure in this direction. It has a statistical foundation and is made up of formulae which are theoretically sound. There is, therefore, no reason or basis in fact for any conclusion that it does not function as originally intended. Aside from the purely physical element of risks, is it not a fact that risks which undertake safeguarding are generally of a better morale class than those opposed to such a program? If this is a safe statement to make, then the schedule is not only a measure of actual physical hazard, but also a reflection of the employers' outlook toward accident prevention.

A second argument might be that experience rating covers the entire field of merit rating compensation risks and that the schedule should be eliminated because it is redundant. There is unquestionably such a thing as a good small risk. As a matter of fact there are numbers of them. What influence has the experience rating plan on the rate for risks having an annual premium of \$400 or less? Nor can the qualifications for experience rating be reduced to fit such risks. As a matter of fact it may well be debated whether the qualifications for experience rating are not already too low. A risk rate level may not be projected by experience rating unless the experience period covers a period representing what we may term the full accident cycle of risk, which may be as much as ten years in the case of small risks. If the qualifications for experience rating are set too low, it operates simply as an indicator of loss ratios over the experience period which has passed, but not as a rate indicator.

And finally, we must remember that the experience rating plan predicates the adjusted rate for a risk from past history. It does not measure present day conditions, nor can it be revised to do so. The principle of experience rating is, briefly, that the past is an accurate forecast of the future. Unless the spread of past experience is sufficient, this premise is, in good part, inaccurate. On the other hand, schedule rating determines a modified rate from present day conditions and insofar as schedule rating can go, is certainly more reliable an indication than a forecast

based upon conditions which existed on the average two and a half years ago. Particularly is this true of risks which have not stabilized their position in their industry.

Finally we come to the point which has been made more than any other and which merits the least attention and discussion. This is the argument that the schedule has outlived its usefulness. To the writer this is not a sensible consideration with respect to the elimination of the schedule. Attention is directed to the average schedule modification and the extreme ranges for separate classifications, indicating that there is considerable that individual risks may still do to improve their hazard. This is entirely apart from the question of rating.

As to rating, the schedule has always operated as a refiner of classification and always will, whether or not the program of safeguarding work in a State generally has reached its apex. To eliminate any part of the merit rating scheme, arguing it to have outlived its usefulness, would clearly be against public policy, there having been too many changes of rating procedure in the last four or five years, many of them operating against the better class of risks.

This clearly is no time to consider the elimination of schedule rating. When a chart illustrating the distribution of schedule modification with respect to number of risks discloses an outline with a narrow base and high altitude, it will be proper to seriously discuss the elimination of schedule rating. Until then we should live with the plan and work to improve it, as admittedly it has worked to improve the hazard of manufacturing risks.

REVIEWS OF PUBLICATIONS

RALPH H. BLANCHARD, BOOK REVIEW EDITOR

Casualty Insurance. C. A. Kulp. The Ronald Press Co., New York, 1928. Pp. x, 610.

Professor Kulp's book covers the entire field of casualty insurance. He has selected his material carefully, has analyzed it thoroughly, and has presented it in a simple, comprehensible manner. (His analyses of casualty insurance policies, for example, are exceptionally well done.) The result is a most acceptable text which shines in comparison with other works on the same and related subjects. It is particularly free from misleading errors of fact; it imparts to the student a clear conception of the coverages embraced in this most extensive and complicated branch of the insurance business; and, unlike many texts dealing with the subject of insurance, it is easily read.

But this is intended to be a book review, and it is not conventional to permit the author to escape without at least a suggestion of adverse criticism. Enough has been said to indicate that the reviewer entertains the kindest feelings toward Professor Kulp's contribution to the literature on casualty insurance. He would hail it with far greater enthusiasm except for two criticisms which appear extremely important to him but which may not carry so much weight with others who will read the book.

The first criticism has to do with the organization of material. One cannot entirely escape the conviction that Professor Kulp's original plan was to write a book, or to prepare a series of lectures, dealing with workmen's compensation insurance. Later, apparently, he decided to extend the scope of his work to cover all forms of casualty insurance—a worthy and commendable decision considering the paucity of literature on this more general subject. But Professor Kulp did not satisfactorily reorganize his material to conform with his enlarged task. Rather, he “tacked on” to a perfectly good text on workmen's compensation insurance a description of other casualty insurance coverages, seeking in this manner to accomplish his object. The result is not entirely satisfactory, and in the reviewer's judgment detracts measurably from the value of the text.

Some day an author will follow a different outline and prepare

a far more valuable and logical work on the subject. He will, first of all, divide the subject into two parts—one of which will be general in scope, the other specific.

The first will describe the casualty insurance business—its origin, historical development, relationship to other branches of the insurance business, present scope and prospects for the future; the kinds of insurance carriers occupying the field—their distinctive characteristics, how they may be legally organized, and the departments which they maintain for the performance of necessary functions; state supervision; rate making; merit rating; cooperative organizations maintained by the carriers; methods employed in distributing shock losses, in producing business, in preventing accidents and other misfortunes underlying the various coverages, etc., etc. Then, having disposed of topics which have an equal bearing on every department of the business, specific reference will be made to individual coverages.

Such treatment would have the advantage of presenting fundamental principles and then showing how these principles are applied in the several departments of the business. It would present the picture in its entirety and in its true perspective.

Professor Kulp's treatment necessarily leaves many questions unanswered—to mention but a few by way of illustration:

Are there monopolistic state insurance funds or inter-insurance exchanges in the field of power plant insurance?

What measure of state regulation is applied to rates for plate glass insurance?

What are the legal reserve requirements for automobile property damage and collision insurance?

What methods are employed for the distribution of shock losses arising out of burglary, theft and robbery policies?

Can automobile burglaries be prevented? If so, how best can this result be attained?

What is the relationship between the Moore Bureau and the National Bureau of Casualty and Surety Underwriters; between the National Bureau of Casualty and Surety Underwriters and the National Council on Compensation Insurance?

Are the legal requirements for the organization of a stock company limiting its operations to accident and health insurance the same as those provided for a company limiting its underwriting activities to workmen's compensation insurance?

After all, it is the *business of casualty insurance* that should be described in a text which purports to cover the subject in its entirety, and it is obvious that this cannot be done satisfactorily by selecting for intensive investigation a single branch of the business, however large and important it is, and however typical an author may assume it to be.

The second criticism is a personal one. The reviewer hopes that Professor Kulp will pardon reference to his academic status; but it is this very status that underlies the second criticism and such reference is, therefore, unavoidable.

Because Professor Kulp is in the position of an interested bystander not actually engaged in the casualty insurance business, his treatment of certain phases of the subject tends somewhat to "jar" one who is an active participant in the business. So long as Professor Kulp limits himself to a description of coverages and conditions as they exist, he is on safe ground; but when he seeks to philosophize, or to explain reasons, or to predict what may reasonably be expected to happen in the future, he is treading on dangerous ground. Anyone can comprehend what is in evidence in manuals, rating plans, policy forms, laws and practices if he will take the time to make a careful survey; but it is not so simple to ascertain the fundamental reasons for the present system, or to understand the forces which will largely determine future trends. The practical man with years of experience, alone possesses this fine sense of values.

The comparison may not be exactly in order but it seems to the reviewer that a professor who, although not intimately associated with the insurance business, nevertheless attempts to analyze its problems, is in much the same position as a monk in a monastery who attempts to write a profound treatise on "matrimony." Each must necessarily draw upon his imagination, and each is likely, therefore, having ascertained the correct external facts, to err in some of his conclusions. This does not, however, make his conclusions any the less interesting.

In Professor Kulp's case many technicians in the business will disagree with certain passages of the text which show bias, even where a statement is supported by reference to an eminent expert like Dr. Downey. But this is not a matter of life and death; casualty insurance experts have always disagreed and probably will continue to do so. They may properly object, however,

when an outsider takes sides on a controversial issue which has troubled the best minds of the business for many seasons and on which his limited background does not justify a positive view.

G. F. MICHELbacher

The Workmen's Compensation Problem in New York State.
National Industrial Conference Board, Inc., New York,
1927. Pp. xx, 375.

The material contained in this volume has been gathered by the Research Staff of the National Industrial Conference Board with the idea of placing pertinent information before the State Industrial Survey Commission created by the New York Legislature in 1926. In assembling such material the Board has consulted various rating organizations and has sent out questionnaires to employers, insurance carriers and labor organizations. The facts are stated comprehensively in clear and analytical form with marked freedom from any partisan arguments.

The author (or should we say authors) reaches the conclusion that the New York law is extremely liberal, its scope broadened by judicial interpretation, the benefit scale relatively high and that, because of its referee system, its administration stands unique among its industrial sister states. True, there is the indication of a tendency on the part of referees and members of the Industrial Board to be occasionally over-indulgent in their attitude toward claimants, but the power of review lodged in the courts has served to promote an equitable administration by defining the scope of the law, by expounding the principles of its application and by judicial intervention restraining the natural sympathy of referees toward poor and unrepresented claimants.

The difficulties and problems of the referee system are outlined with a marked degree of sympathetic understanding. One gets the picture of a judicial officer constantly coping with the problems of the poor, generally guided by a high sense of the just administration of the law, with a due sense of appreciation that otherwise workmen's compensation would become a mere cloak for general health insurance at the expense of the employer and insurance carrier.

The rate-making problem and its various complexities are treated in an illuminating way with a full exposition of the

development of the basic rates and the merit-rating system which is employed for recognizing differences between individual risks by appraising physical and experience characteristics. In a discussion of merit rating the view is expressed that, from the standpoint of the insurance companies, the scheme tends to offset the difference between the stock and mutual companies, and this is supported by the argument that in the absence of any flexible method for reducing rates because of good experience, the stock companies would be left with undesirable risks. This idea seems to be founded on an erroneous conception, since the merit-rating plan applies to all compensation risks regardless of whether insured by stock or mutual companies. Is it possible that the author has accepted the idea that discounts due to merit rating take the place of dividends paid by mutual companies? It would seem that the author does not describe with entire fidelity the relations existing between the several rate-making organizations. The National Council is represented as the supreme body, not only insofar as its administrative branches are concerned, but also in dealing with independent state bureaus such as exist in New York, New Jersey and Massachusetts. Evidently the author has not caught the spirit of the affiliation nor the advisory nature of the functions exercised by the National Council and the limitation of its powers and authority in dealing with independent bureaus.

The merits of private insurance—stock and mutual—as compared with State Funds operating in New York or in Ohio are presented in a fair and unbiased discussion with special emphasis on service and accident prevention work. As a result of its survey, the Conference reports that no sentiment was found among employers in favor of an exclusive or monopolistic State Fund.

In comparing insurance costs the interesting fact is developed that if the Ohio compensation insurance rates were in effect in New York the premiums received would be insufficient by 44% to pay the losses incurred. To put it in other words, the workers in New York receive benefits which are 44% greater than they could have obtained if the Ohio system were in effect. In comparing reported accidents to compensated cases, it is shown that in recent years one out of five reported accidents has become a compensable case. For the five-year period (1919-1924) costs

have increased to the extent of 44% because of law amendments and other influences more difficult to evaluate.

We are informed however, that the increase in compensation costs has not been sufficient to force employers to move their plants out of the state, although in several instances New York employers who have found it necessary to expand their operations have established new plants in other states where compensation costs are not so great. Reference is made to the novel thought expressed elsewhere in a paper printed in these *Proceedings* that if we were to calculate compensation costs on the basis of production instead of payroll exposure, we might get a different picture and would be forced to revise our ideas as to supposed increases in costs. If it could be established that there has been a gradual increase in productivity per employee since 1914 because of increased mechanization corresponding with increased costs, then the employer would perhaps be reconciled to the steadily rising tendency in rates, particularly if he holds in mind the fact that increased production by the greater use of machinery points to the existence of greater hazards.

In discussing the administration of claims, information developed with respect to malingering and the filing of fraudulent claims indicates evidence of abuses, particularly during periods of depression in industrial activity, tending to involve unskilled rather than skilled labor. Employers appear to be inclined to inaugurate the practice of physical examination of prospective employees as a protection against liability arising out of, or aggravated by previous illness or injury. Insofar as lump sum settlements are concerned, the consensus of opinion seems to be against such settlements except in cases involving occupational disease or permanent partial injury. Employers particularly stress the need for educational work in addition to actual safeguarding, pointing to carelessness and difficulty in getting employees to take full advantage of the protective devices which have been installed for the purpose of preventing accidents.

In the introduction to the volume the author endeavors to trace historically the liability of the employer under common and statutory law. One may be permitted to question the accuracy of this sketch in the preface. The lay reader gets the impression that the common-law defenses were introduced by the courts for the mutual benefit of master and servant alike.

Aside from the minor faults indicated, this volume with its quantity of important information and profuse illustrations in the form of statistical tables and charts, represents a valuable contribution to the literature of workmen's compensation and should find a place in the library of every student of casualty insurance.

LEON S. SENIOR

Die Praxis der Rückversicherung. Gustav Cruciger. Vitalis-Verlag, Munchen, 1926. Pp. 272.

Unquestionably, the most important texts on reinsurance are those written in the German language, but even many of these books treat only specialized aspects of the subject. Cruciger's book is one of these specialized German works. As the title of the volume indicates, the author is primarily interested in reinsurance practices. In his introductory chapter he discusses the scope and purposes of reinsurance, coinsurance, reciprocal insurance, the economic significance of reinsurance, and the various types of reinsurance institutions.

This introductory chapter contains the usual definition of reinsurance, namely, that it is the passing on of some part or of the whole of the coverage created by the primary contract of insurance to some other insurer or insurers. A general discussion of the methods and purposes of reinsurance follows, together with comment on the factors which determine the amount of retention in the various branches of insurance.

Cruciger's brief chapter on the history and development of reinsurance reminds us that the history of reinsurance is yet to be written. The only historical work of real merit is the recent "History of Reinsurance," compiled by C. E. Golding. Golding's work resembles more a chronology than a history. Cruciger traces the evolution of reinsurance from the practice of coinsurance. On page 29, there appears the famous contract of marine insurance executed in 1370, which has been so widely quoted in recent periodicals. This case appeared prominently in the literature for the first time in Professor Manes' "Versicherungs-Lexikon," 1909. The history of reinsurance in the major countries of Europe is traced briefly. The historical chapter concludes with a list of 189 reinsurance companies, arranged according to date of establishment. The list includes only

European countries and begins with 1842 and ends with 1924. During the first 41 years of this experience, only 25 reinsurance companies were formed. In the latter half of the period, from 1882 to 1924, there were 164 reinsurance companies established, and of this number 117 began business in the last decade.

The chapter on the legal aspects of reinsurance emphasizes the fact that reinsurance treaties usually provide for arbitration in case of dispute, and, hence, the legal status of reinsurance remains ambiguous. There may be available a mass of statutory and judicial law on reinsurance which has never been applied in practice. It is hoped that further research in this field will tend to clarify the legal status of reinsurance. Other problems considered in the legal section of the text include the relation of reinsurance to international relations, to the rate of exchange and to the liquidation and consolidation of insurance companies.

The chapters on "Treaty Forms" and "Technique" seem to be the best sections of the book. There is a complete discussion of the facultative and obligatory treaties, and of the problems related to each type of treaty. Cruciger defines and explains many of the terms used in reinsurance practice, and describes the ways and means of conducting a reinsurance business. The volume concludes with sample treaties used in the various branches of insurance, such as fire, life, accident, transport, etc. There is a tolerably complete index and a bibliography of 24 titles.

It is hoped that further contributions will be made to the literature on reinsurance. At present, there are available a few elementary texts in French, such as those by Gobert and Villotte; and in Italian, the text by Persico entitled "La Riassicurazione." There is also a French periodical dedicated solely to reinsurance, "La Reassurance." This journal is published monthly.

EDWIN W. KOPF.

Insurability, Prognosis and Selection. H. W. Dingman, M. D.
The Spectator Co., New York, 1927. Pp. 706.

The author of this monumental work is Vice-President and Medical Director of the Continental Assurance Company and Medical Director of the Continental Casualty Company, and therefore naturally views the subject of insurability with reference not only to life insurance in its narrowed sense but also with reference to disability and sickness insurance.

The book is divided into four parts, the first of which is devoted to a general and largely historical view of the subject covering the development of selection methods, with a special chapter devoted to the numerical method, mortality tables, disability tables and mortality of the disabled. In covering so much ground and endeavoring to give the gist of so much material it is natural that a few errors should creep in and a couple were noted in this part. Probably the most important is the statement on page 20 that, under the numerical method, if the occupation is rated + 30 and overweight calls for + 50 the final rating would be + 50. The author has apparently misapprehended the principles of the method as this would assume that although the occupation was ordinarily so injurious as to require a rating of + 30 it would not hurt an overweight. There are, of course, some occupations less injurious to overweight than to those of normal weight but the author expressly and erroneously states that, where there is no interrelationship between two impairments, only the higher rating of the two is to be used.

The second part is entitled, "Personalities," and discusses in successive chapters the relation to selection of the applicant, the agent, the medical examiner, the medical referee, the inspector and the company, with a special chapter devoted to non-medical life insurance.

In the third part the elements of insurability are discussed, separate chapters being devoted to age, sex, build, personal history and physical condition, moral hazard, habits, family history, race and occupation, and four chapters to habitat.

The fourth part is entitled, "Prognosis," and consists of two chapters, the first of which is a short discussion of impairments in general while the second includes about half of the entire bulk of the book and is devoted to a discussion in alphabetical order of individual impairments. It may be noted that of the 365 pages of matter in this chapter, 29 are devoted to tuberculosis, 25 to syphilis, 24 to peptic ulcer, 23 to heart abnormalities, 17 to thyroid diseases, 16 to diabetes and glycosuria, 14 to blood pressure and 10 to albuminuria.

Very extensive references to authorities are incorporated at the ends of the shorter chapters, and at the ends of the discussions of particular impairments in the final long chapter.

ROBERT HENDERSON

Wills, Trusts and Estates. James L. Madden. D. Appleton & Co., New York, 1927. Pp. xv, 258.

For the last few years there has been an increasing tendency on the part of the insuring public to place a considerable part of their life insurance under a form of income settlement. This first became apparent to the insurance companies from the large number of requests electing one of the optional modes of settlement now provided for in the policies of most companies. Later on, with the removal of legal restrictions, the banks and trust companies began to feature the idea of "Life Insurance Trusts" under which they administer the proceeds of a life insurance policy. With the growth of this idea, there also arose a demand for literature on the subject. One of the criticisms made by the layman of most of the books and articles that have been written has been the technical manner in which the topic has been presented. Mr. Madden's book is designed to avoid this.

The book is written in untechnical language and gives in a simple way the important facts and points in regard to the estates created by the proceeds of a life insurance policy, with particular attention to estates provided for a beneficiary under a mode of settlement or a trust agreement with a bank or trust company. The author has made interesting what is ordinarily a dry subject and at the same time has succeeded in clearly stating the important considerations which should be brought to the attention of the insuring public and which should be known by agents and others having to deal with life insurance questions.

The early part of the book is taken up with a description of the various forms of policy and their adaptation to different needs of the insured. Following a discussion of the financial "value" of a life, a chapter is devoted to lump-sum settlements of life insurance policies. In this Mr. Madden points out the danger of loss by the widow of a considerable amount of money by unwise investment or extravagant expenditure. It is a realization of this danger that has led to the development of the insurance trust idea. Mr. Madden, however, points out very properly that before tying up the policy proceeds by a mode of settlement or trust agreement, an insured should make certain that a sufficient amount is made payable in one sum so that the immediate financial strain at the insured's death may be readily met. One of the great dangers in connection with life insurance estates is

that there may not be enough ready money left to the beneficiary to tide her over the period of financial adjustment.

The remaining three-quarters of the book deals with income settlements to the beneficiaries under the policy provisions or under a trust agreement. First, the author discusses at some length the creation of a life insurance estate under one of the optional modes of settlement. The different options ordinarily contained in the policy are set forth in some detail and the advantages of each are considered. The chapter on "Combinations and Trend" is especially valuable in outlining the combinations of different settlements to meet different contingencies. In this chapter Mr. Madden also suggests the advisability of a periodical review by the policyholder of the settlement provisions so as to provide for changed conditions since the original provision was made.

The two chapters which follow, on the designation of beneficiaries and the right to change the beneficiary, contain information and suggestions which will be found of service by both agents and insured. The comparative frequency with which an insured finds himself unable to deal with his policy because of failure to reserve the rights to himself, gives added interest to Mr. Madden's discussion of the subject.

In another chapter the author discusses assignments of policies and surrender or commutation under a supplementary contract. In connection with the question of commutation, the effectiveness of a provision in the policy against commutation is briefly referred to. There is some difference of opinion as to whether a provision exempting interest or instalment payments from claims of creditors will be effective in states not having statutes specifically providing for such exemption. Mr. Madden appears to believe that it would not be effective but he does not discuss the question at length. Attention should be called to the statement on Page 164 that, when a beneficiary has not the right to change or modify the terms of the settlement agreement, the payments to the beneficiary are not taxable. Under the 1926 Income Tax Law such part of the payments as represent interest are taxable.

In his chapter on "Limitations" Mr. Madden considers the rule against perpetuities as applied to settlement agreements. The Common Law rule prohibits the suspension of the power of alienation beyond twenty-one years after the death of the last

survivor of lives in being. This is the rule followed in most states. About eight states have special statutes which are more restrictive than the Common Law rule. The statutes of New York and Louisiana are the most restrictive of these. The statutes or rule against perpetuities as applied to trusts created under a will or a trust agreement has been frequently interpreted by the courts. It has never been applied by a court to an agreement under the optional modes of settlement provision of a life insurance policy. There have arisen differences of opinion among life insurance counsel as to whether the Common Law rule does apply to such an agreement. If it should be held to apply, then in all probability, a settlement, not within its limitations, would be held invalid and the intent of the policyholder would not be carried out. For this reason Mr. Madden urges that any agreement for the settlement of the policy proceeds be kept within the legal limitations. He includes in this chapter the suggestions as to settlements prepared by the Association of Life Insurance Counsel in 1923.

Three chapters are devoted to insurance trusts created under a trust agreement with a bank or trust company. Those who are unfamiliar with the powers and activities of trust companies will find these chapters of particular interest.

In the chapter on "The Unnamed Beneficiary," taxation, both state and federal, of the proceeds of life insurance is discussed. Reference is made to exemption up to \$40,000 of insurance payable to a named beneficiary. Since the book was written, the question of whether it is legal to tax any amount payable to a named beneficiary has come before the Supreme Court for decision in a pending case.

The final chapter on "Wills" outlines the procedure in connection with wills and the selection of executors.

Minor inaccuracies appear. For instance, on Page 75, this statement is made: "Probably the first move in the direction of safeguarding the insurance estate in the interest of the beneficiary was taken in 1879." Reference is made to provision for payment in ten annual instalments instead of a single sum. The author overlooks the fact that many years before this the Mutual Life and other companies issued survivorship (reversionary) annuities providing for an income to the beneficiary after the death of the insured. Taken as a whole, however, these inaccuracies do not seriously detract from the merit of the work. The book is

valuable not only to life insurance agents but also to trust company officials and lawyers who handle estate matters.

WENDELL M. STRONG

Education and Philanthropy. John Alford Stevenson. Ph.D. Appleton & Co., New York, 1927. Pp. xiv, 185.

This book is one of a series of seven edited by Solomon S. Huebner under the general category of "Life Insurance: Its Economic and Social Relations," the purpose of which series, according to Mr. Huebner's editorial preface,

is to provide a specialized life insurance literature, in textbook form, in the interest of (1) making available to many business and professional groups one or more books of large practical usefulness; (2) giving to teachers of the social sciences a special literature identifying life insurance with their subjects of specialization; (3) furnishing an opportunity for further systematic study to those who are pursuing the subject of life insurance in universities and colleges; and (4) offering a similar opportunity to those already engaged in the life insurance field.

The title of Dr. Stevenson's contribution to this rather elaborate program hardly suggests that its substance is the description of two general forms of insurance coverage provided by life insurance companies, *viz*: (1) insurance under which funds will be available at the time needed for the education of the children of the insured, and (2) insurance arrangements making it possible, or easy, for individuals or groups to endow, or make substantial bequests to, educational and philanthropic institutions.

In his approach to the subject of his book Dr. Stevenson presents, first, a chapter showing the stupendous increase in life insurance in this country in the past fifty years, with prognostication for the next ten years, and sets forth four general reasons for the recent rapid development of life insurance. A complete itemized schedule of the "Human Needs For Which Life Insurance Will Provide" is included, an excellent guide for so-called "program" insurance.

The author next gives an outline of the history and status of educational institutions, followed by a chapter entitled "The Value of Education." In this chapter Dr. Stevenson presents statistics, charts and diagrams developed by several research agencies, such as the United States Bureau of Education, Everett W. Lord, Dean of the College of Administration, Boston Uni-

versity, and others. As presented these statistics and charts purport to show the relative "money value" of college education, high school education and of the lack of such "higher" education. Presumably the author thought it necessary to arouse the interest of the reader preparatory to introducing the dryer subjects of his book, which might otherwise find no appeal. The general reader will be deeply impressed with the stupendousness of the institution of life insurance and the non-analytical reader will be convinced of the high desirability of procuring a college education. It seems a pity, however, that the treatment should be more nearly that commonly employed for enthusing salesmen than a presentation of accurately stated premises, essential in a textbook.

From the data and charts presented the reader is lead to understand that by virtue of graduating from college an individual's earning capacity would be about three times what it would be were he not to have proceeded beyond high school graduation, and that by virtue of graduating from high school he would have an earning power of about double what he would have had he not completed the high school course. It is offensive to one who has had some experience in the handling of statistical material that the author does not point out that the relative earning capacities of graduates of colleges, high-schools and lower grades schools (or none at all) are affected by factors, or forces, other than the mere completion of such courses. Important among these are the social and business relations of the individuals or their guardians, as well as the inherent traits or talents which prompt some individuals to acquire such "higher" education. A larger proportion of those who graduate from college come from families which have more than average financial means and more than average business and social contacts than of those who do not proceed beyond high school or attend no educational institutions beyond the elementary grades. To determine with any degree of reliability the relative "money value" of college and high school education would require a comparison of the earnings of persons of the same financial, social and intellectual groups. The reference to the fact that Dean Lord is now directing a national survey as a continuation "of the briefer study just reported" will not suggest to the non-technical reader that the material just reported was sophistry.

In the section dealing with the life insurance companies'

methods for providing funds for the education of children, generally known as Educational Insurance, Dr. Stevenson quotes extensively from advertising literature and policy contracts or supplementary contracts (generally known as trust agreements or as settlement options). This section would probably have been of more value and less tedious in reading had there been fewer verbatim quotations from contracts, and more descriptions and explanation in everyday English of the manner in which the intended purposes are accomplished. Incidentally, as changes are made quite frequently in the terminology of life insurance contracts this section of the book will soon be considered out-of-date.

In the section dealing with the facilities of life insurance companies for providing the means for individuals to endow, or make bequests to, educational and philanthropic institutions the author proceeds in a more interesting and instructive manner, by describing and analyzing the several forms and methods employed.

The completeness of the material given suggests a "Hand-Book" or Manual, without, however, being in the convenient form of such reference publications.

WILLIAM BREIBY

Researches into the Mathematical Principles of the Theory of Wealth. (Reprint). Augustin Cournot. The Macmillan Company, New York, 1927. Pp. xxiv, 213.

This little book by Cournot on mathematical economics, written nearly one hundred years ago, one of the real classics in the field, was first made available in English through the Bacon translation published in 1897. Professor Irving Fisher at that time prepared a brief introductory note on Cournot's life and his writings and a bibliography of works on mathematical economics to accompany the translation. Since 1897 there has been a great development of interest in the application of mathematical methods to the study of problems in economic theory, and Cournot has had many followers. Scarcely an elementary textbook on economics can be found today but shows influence that may be traced back to him. But, for many years now the supply of the Bacon translation has been exhausted and those who wanted to study Cournot have had to depend on libraries. Those

persons interested in possessing their own copy of the translation therefore owe a deep debt of gratitude to Professor Irving Fisher for his assistance in persuading the Macmillan Company to re-print the volume.

A review of the significant developments in Cournot's volume in the present note is unnecessary since that task has been so ably performed already by Professor Fisher and Professor Edgeworth, the former in an article entitled "Cournot and Mathematical Economics" in the *Quarterly Journal of Economics* for January 1898, and the latter in a review now available in his "Paper Relating to Political Economy," Volume 3, pp. 109-111. The reprint includes, in addition to the materials published in 1897, Professor Fisher's notes on Cournot's mathematics taken from his article in the *Quarterly Journal*.

BRUCE D. MUDGETT

Business Cycles and Business Measurements. Carl Snyder. The Macmillan Co., New York, 1927. Pp. xviii, 326.

Practical Business Forecasting. David F. Jordan. Prentice-Hall, Inc., New York, 1927. Pp. xiv, 285.

Two books on the same subject more antithetical than these would be hard to find. "Business Cycles" is an exposition of the results of original studies of cyclical fluctuations in volume of trade, bank debits, bank clearings, velocity of bank deposits, railway traffic, iron production, production in basic industries and the general price level, while "Practical Business Forecasting" is a collection and interpretation of unrelated investigations on numerous types of business problems. Mr. Snyder's book is not a survey of statistical methods for time series, neither is it a general review of business cycle theories, but it is a useful summary in permanent form of the valuable results of his investigations of the subjects above mentioned, the substance of which has been published previously in numerous periodical articles.

Mr. Snyder's book, while not so divided, consists essentially of four sections: two chapters portraying sketchily but interestingly the recurrence of business prosperity and depression and emphasizing the normal long-time growth of production and trade; the third, fourth and ninth chapters, explaining the general methods of analysis and the use of trend as a measurement base; a third

section detailing the considerations governing the methods adopted for the various indices referred to; and a fourth section interpreting the business cycle in the light of business failures, prices and interest rates. The author concludes that forecasting methods based upon the correlation of business indices cannot be implicitly relied upon because such correlations do not consistently hold; that forecasting methods based upon the mechanical projection of cycles are unreliable because of the absence of sufficient regularity in cycles; but "within reasonable limits we can now understand what is happening and what has happened and we can estimate roughly what is going to happen." "Reasonable limits" and "roughly" are expressions of indefinite latitude.

The principal methods of treating time series used may be summarized briefly as (1) description of trend by straight lines or parabolas applied to absolute data or logarithms; (2) determination of seasonal by the typical percentage variations of the original items from a 12-months moving average; and (3) computation of the percentage cyclical variations from the trend. It is impossible here to discuss numerous time series analysis factors, and those who are interested can find a comprehensive but not unduly technical critique of various methods in Mitchell's "Business Cycles; The Problem and its Setting," which will indicate the problems of flexibility of trend, changing seasonals, intermediate trends, etc.

Mr. Jordan's book, as its title indicates, assumes to begin where Mr. Snyder's leaves off, that is, with the application of the numerical description of the past to the forecasting of the future. It endeavors to show "actual practices as contrasted with hypothetical problems" and to be "a composite answer to the question of how American business is trying to plan intelligently for the future," with the reservation that "business forecasting can never represent more than a rough approximation of probable events." This book will at least contribute to one good result, namely, to distract some attention from the business "cycle" and divert it to other equally useful statistical studies of business. The book deals with the problem of business forecasting in three parts: long-term forecasts for over five years; medium-term forecasts of 1-5 years; and short-term forecasts for 1 year or less.

The author's estimate of the possibilities of business forecasting, in spite of the above warning, appears from the first

chapter to be founded upon the accomplishments in the fields of astronomy, life insurance, weather forecasts, population, national budgets and crop reporting, to which the principles of probability and sampling are more or less applicable or which carry a certain degree of control within themselves. It may be questioned whether such are any indication of the probable achievements of business forecasting.

Long-term forecasts are based upon the ascertainment of trend, only a few of the simpler methods being presented. The suggestion is made that zones showing the "range of error" of these trends be set up but no method of arriving at them is suggested.

"Medium-term forecasts" prove to be merely projections of trend and cyclical fluctuations. The "normal method" described seems to be the commonly used straight-line trend, a vaguely described seasonal measurement and the cyclical residues relative to the trend. The author proceeds to suggest a "selected list" of barometers for the purpose. There is then given a description of compilations which have been made of statistical data on general manufacturing, pig iron production, unfilled orders of the steel corporation, etc., etc., sometimes as "raw" data, sometimes as statistically transformed by statistical services and sometimes as index numbers on a fixed base. With each of these goes a description of its importance and an "interpretation." The "interpretations" referred to consist of suggested "normal" zones of fluctuation which appear to have no mathematical basis.

Short-term forecasting reduces to ascertaining the seasonal by averaging the monthly items or by the link-relative method. The narrowness of such an outline of seasonal analysis is as much to be condemned as the unnecessary vagueness with which the subject is treated.

Six chapters on the utilization of forecasting are the best feature of the book. These are interesting as illustrations of the possible application of statistical methods to concrete business problems such as forecasting telephone growth, factory expansion financial requirements, consumers' demands, railroad traffic, construction programs, seasonal variations in demand, budgets, etc. The latter part of the book is a description of the characteristics of business cycles, a description of the important cycles in United States industrial history and an appendix describing

(in their own language) the Harvard, Babson, Brookmire and Franklin economic services. The latter gives the interpretation of the charts prepared by the services rather than the methods of analysis employed. The theory of cycles advanced is a theory of inaccurate appraisal of supply and demand and relative rates of decline of price and costs.

What are the principal contributions of these volumes? Jordan's "Business Forecasting" gives a general view of some economic data available for forecasting purposes which may be useful to those who are relatively unfamiliar with sources of information. It quite evidently is not intended for statisticians, giving a simple but superficial explanation of a few methods of statistical analysis. It shows how some methods have been applied in efforts to solve specific business problems, which may be suggestive to those who have similar problems. The "interpretations" involved in the author's theory of forecasting depend too much upon his personal ability and experience to be accepted as a scientific method.

Mr. Snyder's book is of entirely different character. While it is concerned with a few specific problems, the careful collection of data, the testing of methods and results, as well as the judicial analysis of the significance of the results make this volume authoritative and thoroughly scientific in character. It is not a critique of statistical methods or theories of business cycles, nor does it profess to be, except so far as one may be misled by the title. The results of Mr. Snyder's studies have already been so widely utilized and quoted since their appearance in periodicals that comments upon their value are unnecessary.

ROBERT RIEGEL

CURRENT NOTES

SYDNEY D. PINNEY, CURRENT NOTES EDITOR

COMPENSATION FOR OCCUPATIONAL DISEASES

When compensation laws were first adopted in Europe as substitutes for the old employers' liability laws, they covered "injuries by accidents," including diseases only when resulting from accidents and excluding all diseases of gradual contraction.

At first "injury by accident" was generally agreed to mean "an injury resulting from an unexpected and fortuitous event, happening more or less suddenly, at a definite time and place." But this definition has since been liberalized in many jurisdictions to require only that the injury be unexpected and fortuitous, in which circumstances the injury itself is treated as the accident. Thus, under this construction, the injury need not necessarily be caused by an accident, but may result from merely normal and customary activities in the employee's occupation. Under this rule industry is made liable for deaths and disability from heart failure, hernia, epilepsy, typhoid fever, and other similar common diseases, the cause for which can be directly traced to the conditions of the employment.

As already noted, all the European compensation laws originally were limited to cover only "injuries by accident." The reasons therefor are too complex to be set forth adequately here. Briefly indicated, these reasons principally were, first, the general impossibility of determining with any reasonable degree of certainty in individual cases whether the illness really arises from the employment or from other causes, such as the exposure of the employee away from work, his habits of living, or pre-existing disposition; and, second, a well-founded belief that responsibility for all impairment of health resulting from customary work and working conditions, regardless of fault, can not be placed upon employers without creating a sense of irresponsibility among employees for the care of their own health. Later there were enumerated certain trade diseases, commonly called "occupational diseases," which originate from risks inherent in the nature of certain occupations and which can be traced to occupational origin in individual cases; for example, anthrax, lead poisoning, phosphorus poisoning, etc. Some of the foreign laws now enu-

merate (schedule) such diseases as the latter and make them subject to compensation under special conditions.

According to the International Labor Review, October, 1927, Switzerland led the way, in an act of 1877, by imposing upon employers responsibility for occupational diseases. These at that time were defined as diseases common to the use of certain poisons or harmful substances in industry, where demonstrably and exclusively caused by the occupations. The list of poisons and harmful substances under the Swiss law has been expanded until now it includes some eighty-eight items. The provisions of the law defining the conditions for responsibility have gradually been elaborated in details, but still adhere closely to the original purpose and effect.

In Germany the compensation law has long contained a provision empowering the Federal Council to extend industrial accident insurance (analogous to workmen's compensation in the United States) to cover such occupational diseases as the Council shall specify and to issue special regulations therefor. For years the Council was not convinced regarding the wisdom of exercising this power, but in July, 1925, the Minister of Labor, succeeding to the power of the Council, issued an order making compensable, as if accidents, diseases caused by lead and various other substances or their compounds, or by radioactive rays, and several miners' diseases as specified.

In 1906 the workmen's compensation law of Great Britain was amended to provide compensation for certain diseases scheduled. In order to secure compensation it must now be shown that the disease is due to the nature of the employment in which the workman was engaged within one year previous to his disablement; but opposite each disease in the schedule of "industrial diseases" certain processes or occupations common to the industry are named, which are sometimes known to have caused such a disease. If immediately before the date of his disablement the workman was employed in a process or occupation so named, the disease is rebuttably presumed to be due to the nature of his employment. Where the disease is shown to have been contracted in two or more employments within the year preceding disablement, the last employer is liable for the entire compensation, but may recover an equitable proportion from the earlier employer or employers liable. Under the last mentioned law,

the Secretary of State can add, and has added, new occupational diseases to the original schedule. The compensation laws of the British Dominions generally contain provisions relative to occupational diseases modeled after those of the British law.

In France a law of October 25, 1919, amended the Industrial Act of April 9, 1898, to provide for compensation for diseases arising from the use of lead or mercury. The compensation laws of Belgium, Finland, Argentine, Brazil, and Chile also contain similar provisions relative to occupational diseases, whereas the laws of the Mexican States provide for compensation for "occupational diseases" indefinitely. Except as above specified, the better known foreign workmen's compensation laws apply only to "injuries by accident."

In America the events which stand out prominently in industrial legislation during the past fifty years are: curtailment of children's and women's labor, including the abolition of night-work and shortening of working hours; the Saturday afternoon holiday; improvement of the conditions under which labor is generally carried on, such as the safeguarding of machinery in dangerous trades; better provision of hygienic and sanitary conveniences for the workers, which often give the work-people healthier and more sanitary surroundings than they have at home; and better education generally. These changes have done much to raise the working classes to a higher standard of comfort. And, finally, workmen's compensation laws have been enacted in most of the states to the great benefit of employees.

At the present time ten states, two territories and the federal government (for employees of the United States government and for longshoremen and harbor workers) provide compensation either for occupational diseases generally or for designated diseases of this class. The states and territories providing compensation for occupational diseases are: California, Connecticut, Hawaii, Illinois, (in certain employments, by separate act), Massachusetts (by court decision), Minnesota (schedule), New Jersey (schedule), New York (schedule), North Dakota, Ohio (schedule), Porto Rico (schedule), Wisconsin and the United States. The law of Kentucky also includes "injuries or death due to the inhalation in mines of noxious gases or more commonly known as 'bad air,' and also shall include the injuries or death due to the inhalation of any kind of gas."

The federal civil employees' compensation law and that of North Dakota include under the term "injury" any "disease proximately caused by the employment." The federal long-shoremen's act covers accidental injuries and such "occupational diseases (undefined) as arise naturally out of the employment."

Under the Massachusetts law, compensation is payable for any injury arising out of and in the course of the employment without any definition of the word "injury." Under the Wisconsin law, compensation is payable for "accidental injuries" and, in addition, "for all other injuries, including occupational diseases, growing out of and incidental to the employment," without any definition of the words "occupational diseases." Under the Hawaiian law compensation is payable for "personal injury by accident" or "by diseases proximately caused by the employment or resulting from the nature of the employment." Under the California law, "injury" is defined to include "any disease arising out of the employment"; but in case of aggravation of a pre-existing disease, only such aggravation is to be compensated for. Under the Connecticut law, the former tendency toward making the compensation law cover all "injuries," including injuries to health indefinitely, received a check when the law was amended to limit compensation to "accidental injuries" and "occupational diseases" and to define an "occupational disease" to mean a "disease peculiar to the employee's occupation and due to causes in excess of the ordinary hazards of employment as such."

In comparing the foregoing plans, it is said by experts that the facts sustain the conclusion that the "schedule plan," now best formulated in the British workmen's compensation law, is by far the better method of defining the classes of disease which shall be compensable.

An objection sometimes made to the "schedule plan" of dealing with occupational diseases is that experience from time to time brings to light new occupational diseases, not in the schedule, for which compensation ought to be granted. The answer to this objection is that such diseases should be added to the schedule as fast as competently identified. Whether or not and under what conditions, if any, a particular disease, in individual cases, can be diagnosed with a fair degree of certainty as being truly caused by some special risk of the patient's occupation, is essentially a

medical question and the purpose of the schedule is to determine such questions by statute in accordance with the prevailing opinion among the medical profession up to date, instead of leaving them to be decided haphazardly and contradictorily in each particular case, by laymen, upon partial and conflicting medical opinions.

Another criticism to the "schedule plan" is that cases occasionally occur where common diseases are manifestly contracted through some special exposure for which the patient's occupation is directly and clearly responsible. But in such cases, if the disease is contracted at some definite time and place, it should be and is compensable as an "injury by accident." However, if a common disease, to which the general public is exposed and which consequently is a risk of ordinary life, may have been contracted either while at work or while away from work, it should not be compensable.

Some of our American compensation laws, however, have rejected the precedents and experience of foreign countries with respect to occupational diseases and more liberally provide for compensation for every injury resulting from the employment—including diseases (generally or indefinitely)—either by explicit words to that effect or impliedly by omitting or materially weakening the requirement that the injury must be "by accident." There is now a strong tendency throughout the country (but not abroad) to liberalize the compensation laws in that direction. Where this tendency prevails it may mean that the commission or commissioners, who hear claims and decide questions of fact, may hold industry responsible for impairment of health in any way or degree contributed to by the patient's work. His employment need not contribute directly to the illness, it being sufficient if it merely reduces the patient's resistance to disease. The commission or commissioners do not as a rule go to immediate extremes in the application of this principle, but the tendency has been to progress, applying the rule more and more liberally.

The effect of this liberalizing tendency is conducive to uncertainty as to the existence and the degree of the employer's liability; and this uncertainty results in that very litigation which the compensation acts were designed to abolish. The flow of "constructive" decisions results in a continuous change in the

compensation basis, upon which basis is predicated, necessarily in advance, the cost of compensation, whether as insurance or self-insurance. The cost, therefore, becomes difficult, if not impossible, of advance determination, and unexpected and unpredictable losses are thus charged against the general compensation funds. Difficulties arise in the handling of cases, since at the time of their occurrence illnesses are not regarded as accidental which later, through court decisions, are held to be accidents, thus prejudicing investigation and the determination of the facts, necessitating changes of records and the making of other adjustments—adjustments which serve little purpose as respects future cases. Employees as a class, who do not, and cannot be expected to understand the process of the courts, the intricacies of evidence, and the like, and who see compensation awarded in one case and denied in another which to them is similar, become dissatisfied with the administration of the law. Criticism arises which has no foundation in the act as originally passed, and which results in legislative tinkering, demands for state insurance, additional judicial constructions, and generally tends to an unsatisfactory condition.

The objection to occupational disease provisions, as found in the federal statutes and in such state laws as Massachusetts, California and Wisconsin, is that the provision of these laws relative to compensation for disease have no definite meaning even in application to ascertained facts. The Massachusetts courts have had difficulty in interpreting "an injury arising out of the employment" in so far as it concerns diseases, and experience in the other states has shown inordinate amounts of litigation over the provisions of their compensation laws relating to diseases, in proportion to the number of claims involved, demonstrating that such provisions are quite uncertain and unreasonable in application.

Another fundamental objection to the provisions of these laws relative to compensation for disease is that they leave it to the administrative officers to determine the questions of fact, that is, medical questions which the medical profession itself pronounces to be undeterminable.

Industrial legislation has been in the main devised to protect the health of the work-people and to safeguard their interest. Decade after decade has witnessed a succession of factory acts

and labor laws based upon experience and necessity. It might have been expected that at the end of a half a century of experience and progress industrial evolution would have reached such a degree of excellence and attained to such a standard of hygienic perfection that little more would be required to be done. Not so, however, for the subject is endless. Each succeeding decade brings its own problems for solution. One important problem at present is the tendency to liberalize the construction and application of occupational disease provisions of the compensation laws to such an extent that the law becomes in effect broad compulsory health insurance. It is a problem which requires the attention of the best minds to eliminate the practical difficulties and to encourage legislation that is just and fair to all. (Bulletin No. 33, Insurance Department of the Chamber of Commerce of the United States.)

INSURANCE AGAINST THE DOCTOR'S BILL

We have already referred to a scheme, instituted by Family Medical Services, Ltd., whereby an insurance policy can be taken out to cover the financial risks of medical service. We have now received full particulars from the managing director, Mr. B. B. Ormerod, of 20, York-Street, Manchester. He points out that, unlike food, education, clothing, old age, and the other items of the middle-class budget, the doctor's bill cannot be certainly estimated, and provision therefore cannot be made for it. The "Anchor" policy is designed to meet this difficulty. It applies to all persons between the ages of 2 and 55 not included under the National Health Insurance Act, and the premium works out at from 3½d. to 1s. 6d. per week per member of the family. An average premium for two persons would work out as follows:—

General practitioner's account, up to 5s. per visit.....	£ 1	0	0
Operations, including nursing and incidental expenses up to £50.....	1	5	0
Specialist consultations.....	0	9	0
Annual premium.....	£ 2	14	0

The insured person carries a primary small charge up to £2 in order to eliminate the trouble and expense of small claims. A family of four people could be insured for all general practitioner's fees over £3 and for operations up to £50 per person for an annual

premium of £4 5s. 6d., and reductions are allowed as the family increases.

This scheme, the financial security of which rests on backing by underwriters at Lloyds, clearly has advantages over the ordinary sickness policy, under which a man insured for sickness benefit receives the same sum whether he has been three weeks in bed at home with influenza and hardly any expenses, or whether he has spent three weeks in a nursing home after an appendectomy which cost him anything from £50 to £100. Whilst the "Anchor" policy does not at present provide for requirements like massage, spectacles, dental treatment, inoculations, sanatorium and hospital treatment, the organisers are stated to have these "extras" on the medical bill in mind. (*The Lancet*. London, 2:1256, Dec. 10, 1927.)

NEW INTERNATIONAL INSURANCE JOURNAL IN ITALY

The *Rassegna Delle Assicurazioni*, Milan, Italy, is now in its second year. It is published monthly and contains articles on insurance as contributed by a distinguished group of authors in the European insurance field. The February, 1928 number had an article on Group Insurance by Dr. M. Costellani, one on social insurance by Dr. Alfred Morres, an article on insurance law by Dr. Z. Bozzotti, and a bibliography of recent Italian works on insurance. The Director of the publication is Dr. Attilio Fontana and the Managing Editor, Mr. Franco Silvio. The office of publication is *Via Andegari, No. 18*, Milan, Italy, and the foreign subscription price, 80 lire.

EXAMINATIONS OF THE CHARTERED INSURANCE INSTITUTE OF GREAT BRITAIN, 1928

The Chartered Insurance Institute conducted its examinations for Fellowship and Associateship syllabus over the period February 23, to March 6, 1928. The examinations of the Institute are divided into two stages,—Associateship and Fellowship. The full syllabus may be obtained upon application to the Secretary, 11 Queen Street, London, E. C. 4, England.

The Associateship examination is held in four parts,—Fire, Life, Accident and Marine. The examination in each part consists of a "preliminary" examination and an examination in Parts I and II. Candidates for Part I of the Associateship exam-

ination must have passed in or been exempted from the "preliminary" examination. To be eligible for Part II, candidates must have completed Part I.

Successful candidates must obtain not less than 60 per cent. of the total marks allotted to any paper to secure a "pass" and not less than 80 per cent. to secure "honours." The candidate for Associateship must have qualified in Parts I and II of one of the four branches. The schedule of the 1928 examination subjects follows. Three hours are devoted to examinations in each topic.

1928

Insurance Education

Chartered Insurance Institute of Great Britain

Examinations, 1928

Insurance Record—February 15, 1928—pp. 208-209.
(three hour sessions) February 23—March 6, 1928.

FELLOWSHIP

1. Principles and practice of insurance—general
- 2. Principles and practice of fire insurance
3. Principles and practice of life insurance
4. Principles and practice of accident insurance
5. Principles and practice of marine insurance
6. Thesis

ASSOCIATESHIP (BY BRANCHES)

I. *Accident Insurance:*

1. Accident insurance—foreign
2. Workmen's compensation
3. Foreign languages
4. Geography—foreign
5. Claim practice
6. Accounts and investments
7. Law of insurance: home accident
8. Motor insurance
9. Physiology and anatomy
10. Guarantee insurance
11. Office organization and routine
12. Burglary insurance
13. Law of master and servant—industrial injuries

I. *Accident Insurance—(Continued):*

14. Public liability insurance
15. Legal liabilities—public liability policies
16. Principles and practices of insurance—home accident
17. Personal accident, disease and sickness insurance

II. *Fire Insurance*

1. Fire insurance—foreign
2. Law of fire insurance—home fire
3. Languages—foreign
4. Geography—foreign
5. Building construction
6. Accounts and investment
7. Common hazards
8. Chemistry
9. Principles and practices of insurance—home fire
10. Electricity
11. Plain drawing
12. Average clauses and loss apportionments
13. Policy drafting and endorsements
14. Fire extinguishment
15. Processes of manufacture
16. Insurance against loss of profits

III. *Marine Insurance:*

1. Geography
2. Marine insurance clauses
3. Carriers' Act
4. Accounts and investments
5. Marine Insurance Act, 1906, etc.
6. Law and practice of general average; York-Antwerp rules
7. Law and practice of marine insurance, excluding general average and R. D. C.
8. General average: York-Antwerp rules
9. Law of Carriage of Goods by Sea
10. Insurance of hulls
11. Principles and practices of marine insurance
12. Knowledge of ships and shipping

IV. *Life Insurance:*

1. Principles and practices of life insurance
 2. Life office accounts and investments
 3. Compound interest
 4. Tables of mortality
 5. Elementary human physiology
Well-known diseases; common medical terms
 6. Law affecting life assurance practice
 7. Office organization and routine
 8. Life office valuations—sources of profit
 9. Types of proposals and assurances
 10. Policy conditions; drafting; endorsements
 11. Life assurance practice
 12. Geography
 13. Occupational risks
 14. Correspondence; the prospectus
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PRELIMINARY

1. English grammar and composition
2. English history
3. Geography
4. Chemistry
5. Mathematics
6. Magnetism and electricity
7. Bookkeeping
8. Heat and Light

THE NEW UNEMPLOYMENT INSURANCE ACT IN GREAT BRITAIN, 1927.

Most of the provisions of the Unemployment Insurance Act in England, 1927, came into actual effect on *April 19, 1928*. The new rates of benefit, the operating conditions and administrative methods began to apply on that day.

The weekly *contributions* payable by the worker and by the employer, payable from July 2, 1928 onward, are as follows:

Age	Old Rates				New Rates			
	Men		Women		Men		Women	
	Wkr.* d.	Emp.† d.	Wkr. d.	Emp. d.	Wkr. d.	Emp. d.	Wkr. d.	Emp. d.
Over 21 years.....	7	8	6	7	7	8	6	7
Persons 18-21.....	7	8	6	7	6	7	5	6
Persons 16-18.....	3½	4	3	3½	3½	4	3	3½

*Workers; †Employer

No contributions are payable after January 2, 1928, by an employed person 65 years of age and over in view of the provisions of the Widows' and Old Age Pensions Act. The employer must, however, still pay his share of the contributions on cards supplied by the Ministry of Health.

The new rates of unemployment benefit, all payable from April 19, 1928, with the exception of the new rates for persons between the ages of 18 and 21, which commence on July 5, 1928, are as follows:

Age	Old Rates				New Rates			
	Men s. d.		Women s. d.		Men s. d.		Women s. d.	
Persons over 21 years.....	18	0	15	0	17	0	15	0
Adult Dependents (Wife, etc.)..	5	0	5	0	7	0	7	0
Young Persons over 20 but under 21.....	18	0	15	0	14	0	12	0
Young Persons over 19 but under 20.....	18	0	15	0	12	0	10	0
Young Persons over 18 but under 19.....	18	0	15	0	10	0	8	0
Boys and Girls 16-18.....	7	6	6	0	5	0	5	0
Dependent Child.....	2	0	2	0	2	0	2	0

In brief, the new rates of benefit mean an increase of 1s. per

week to the married man, a reduction of 1s. per week for the adult single person and still greater reduction for persons under 21 years of age. In the case of persons under age 21, with adult dependents, the full adult rate of benefit is paid. Because of the provisions of the Widows' and Old Age Pensions Act, persons 65 years of age and over ceased to be entitled to benefit as of January 2, 1928.

NORMAL CONDITIONS OF BENEFIT, 1928

The normal conditions of benefit are as follows: (a) that the claimant for benefit shall have 30 premium stamps on his card in the two years prior to his claim for benefit; (b) that he is available for, but is not able to obtain, suitable employment; (c) that he is genuinely seeking work; and (d) that his unemployment is not due to a trade dispute or to misconduct or voluntarily leaving work without just cause.

Where these conditions are complied with, benefit is payable as a right, quite irrespective of the income of the claimant from other sources, or the income of the household. The discretionary power of the Minister of Labor for prescribing other restrictions and refusing benefit for reasons expedient in the public interest was entirely abolished as of April 19, 1928.

There are many alterations in the present law of minor character, and these were established on the basis of experience with unemployment insurance in Great Britain since 1911 and with the system of unemployment exchanges established in that country in 1909.

EIGHTH INTERNATIONAL CONGRESS OF ACTUARIES*

The Eighth International Congress of Actuaries was held June 27 to 30, 1927 in London, the first resumption after the war of the series of triennial congresses held through 1912. Aside from the English and Scotch members present there were 314 members from 23 other countries including 46 from the United States and Canada. The official languages were English, French and German.

107 papers were presented, all but a few miscellaneous papers

*Contributed by Mr. James S. Elston.

being devoted to the following subjects: Industrial Insurance, Group Insurance, Social Insurance, Disability Benefits, Under-Average Lives, Risk Premium Reinsurance, and Currency Depreciation. American papers were presented in all classes except the last. Apparently the American papers were of most interest on Group Insurance, Disability Benefits, and Under-Average Lives while the European were specially noteworthy in the case of Social Insurance and Currency Depreciation.

A characteristic of this Congress was the practical rather than theoretical nature of the papers and discussions. All papers were printed and in hand in pamphlet form at the meetings. In the case of each subject, an Englishman had been assigned to summarize the papers and lead the discussion. After each discussion in one of the official languages, interpreters summarized it in the other languages.

The opening ceremony was in Grocers' Hall. The subject of Social Insurance was covered in Staple Inn Hall, the ancestral home of actuarial science among the English speaking nations if not of the world. The discussion of the other subjects was in the historic Guildhall. The setting could not have been more impressive.

Casualty Insurance was scarcely touched and then only as a branch of Social Insurance. The only American papers on this were "Workmen's Compensation Rate Making in the United States" by W. F. Roeber, "Experience Rating of Risks for Workmen's Compensation in the United States" by Albert H. Mowbray, and "Pension and Retirement Systems in the United States" by George B. Buck. Workmen's Compensation was mentioned also in "Social Insurance in the United States" by Reinhard A. Hohaus. Most of the English speaking actuaries were interested in Life Insurance and most of the Continental actuaries, many of them statisticians rather than actuaries, in Social Insurance. Of course where such a vast field is to be covered by one Congress it is impossible to meet all interests but the question might well be raised whether various branches of Casualty Insurance might not well be covered at the next International Congress.

The features of the Congress that are best remembered, however, were the social functions, the dinner given by the British actuaries to all visiting actuaries, the reception at Mansion House

by the Lord Mayor of London, the reception at Lancaster House by the chancellor of the exchequer, the Honourable Winston Churchill, the reception at Windsor Castle, and the Official Banquet in the Guildhall besides the other functions such as the luncheon given by members of the Councils of the American Actuarial Societies to the members of the Councils of the Institute of Actuaries of Great Britain and of the Faculty of Actuaries of Scotland. Most of the actuaries were then taken on an automobile tour to Scotland for which all arrangements had been thoroughly and most satisfactorily made by the British. On this tour they were entertained at a banquet by the Lord Mayor of Birmingham, at a reception by the York Philosophical Society, at a luncheon by the Lord Provost of Edinburgh, and at a reception by the Faculty of Actuaries of Scotland. Then followed a further tour of Scotland by automobile and through some of the lochs by steamer. The wives of actuaries attending were included in nearly all the social functions and in the tour north, as well as in several entertainments especially for them.

The features of all the entertainment were not only the perfection in the arrangements and the impressiveness of the ceremonies and in many cases the rich historic backgrounds, but the generous hospitality of the hosts, the friendliness of all members attending, and the opportunities of becoming better acquainted with old friends and of making new friends. A much better idea of the Congress can be obtained from the Presidential Address of Sir Joseph Burn given in Volume LIX of the *Journal* of the Institute of Actuaries, from the Presidential Address by E. E. Rhodes given in Volume XXVIII of the *Transactions* of the Actuarial Society, from the Presidential Address of John G. Parker given in Volume XVI of the *Record* of the American Institute of Actuaries and from the Impressions of the Eighth International Congress given in Volume XXVIII of the *Transactions* by many of the actuaries who attended. Four volumes of the *Proceedings* of the Eighth International Congress of Actuaries have already appeared, two in English giving the papers originally presented in English and extracts in English of the French and German papers and the other two volumes correspondingly giving French and German papers and extracts. The fifth volume which has not yet appeared gives the *Proceedings* and the Reports of the discussions.

PERSONAL NOTES

W. M. Amerine, formerly Assistant Secretary of the Georgia Casualty Co. is now with the Zurich General Accident and Liability Insurance Co. in Chicago.

William M. Corcoran previously Actuary of the Connecticut Insurance Department is now with S. H. and Lee J. Wolfe, Consulting Actuaries in New York City.

Paul Dorweiler is now Actuary of the Accident and Liability Department of the Aetna Life Insurance Co. in Hartford.

Arthur Hunter is now Second Vice-President and Chief Actuary of the New York Life Insurance Co. in New York City.

Robert J. McManus is now Statistician of the Casualty Actuarial Department of The Travelers Insurance Co. in Hartford.

S. T. Chen is now in the Actuarial Department of the China United Assurance Society, in Shanghai, China.

James D. Craig, Second President of the Casualty Actuarial Society, has been honored by having been elected President of the Actuarial Society of America.

LEGAL NOTES

BY

SAUL B. ACKERMAN
(OF THE NEW YORK BAR)

AUTOMOBILE

Cancellation for Fraud.—(Maryland Casualty Co. *vs.* Lamarre et ux. Supreme Court of New Hampshire, Hillsborough, Jan. 3, 1928. 140 Atlantic 174, 70 Ins. L. J. 856.)

This is an action by the company to cancel an automobile policy, to restrain recovery thereon and to temporarily enjoin further trial of an action at law brought by an injured passenger against the assured. The assured's wife was injured in an accident while she was a passenger in her husband's car and brought an action against him. That action resulted in a mistrial. The company in this action seeks to cancel the policy on the ground of fraud and collusion. The wife was seriously injured by the negligence of her husband, the assured, and he testified to his own negligence in the action she brought. There was similar testimony by other witnesses. He arranged for the attendance at the trial of his wife's witnesses and expressed a desire that his wife succeed.

The Supreme Court of New Hampshire held that the Company's action was properly dismissed and that the policy was not to be cancelled. Concerning the allegations of fraud and collusion the Court had this to say,

"The insured's confessed desire that his wife would receive a verdict is relied upon as proof of fraud. The insured was called as a witness by the plaintiff. In response to several leading questions on cross-examination by the counsel for the company as to whether he would be glad if his wife were to receive a verdict, he reluctantly replied in the affirmative, stating that she deserved it. This expressed wish for his wife's success and declared confidence in the merits of her case did not constitute conclusive proof of fraud, but, like other conduct tending to favor his wife's suit, were merely evidentiary facts bearing on his honesty.

"The plaintiff's position is necessarily based upon a claim either that the court has found as a fact that the insured's conduct was fraudulent, or that the facts reported conclusively disclose his fraud. The claim can be sustained in neither respect. The contention that the court has found collusion as a fact is based upon a misinterpretation of the language employed and requires little

attention. The use of the word 'collusion,' evidently borrowed from the plaintiff's allegations, was perhaps unfortunate and misleading. That it was not intended, however, to include a finding of fraud, which the word in its more common use connotes, is made evident by the court's express qualification; namely, 'in the sense and to the extent that the defendant (the insured) made it as easy as possible for his wife to recover a verdict against him, assisted in arranging for the attendance of witnesses, and said that he would be glad if she got a verdict, knowing that in that event he could not pay, and believing the insurance company would pay.' The apparent purpose of the court was to enable the plaintiff to raise the question of law whether the enumerated facts constituted fraud in law. The statement in question therefore amounted to no more than a recital of facts, the force of which has already been considered. That a finding of fraudulent conduct was not intended is further supported by the court's conclusion that the prayer of the plaintiff's petition should be denied."

Subrogation.—(Hamilton Fire Ins. Co. *vs.* Greger et al. Court of Appeals of New York, July 20, 1927. 158 N. E. 60; 69 Ins. L. J. 1110.)

A policy was issued indemnifying the assured against loss by reason of the destruction of an automobile owned by him. His automobile was destroyed in a collision with a train and the company paid him the sum of \$2,000, receiving therefor a receipt reciting that it was "in full of all claims and demands for loss and damage by collision on the 1st day of April, 1925, to the property insured by policy No. . ." The assured thereafter brought suit against the railroad company for damages caused by the collision. The complaint recited the destruction of the automobile and personal injuries. It said in part, "That said injuries are permanent, and plaintiff underwent great pain and suffering as a result of said negligence. His clothing was destroyed and in diverse other respects he suffered considerable damage and will continue to suffer damage in the future." This action was settled by the railroad company for \$3,000 for which it received a release "from all debts, claims whatsoever, and particularly such as have arisen by reason of, or in any manner grow out of but in no wise limiting this release for all damages sustained as a result of" the collision. The release also purported to discharge all claims that the assured then had or his assigns might thereafter have by reason of the accident.

The railroad company made this settlement "after being informed of the fact that the assured was insured against any damages to his automobile as a result of a collision."

The insurance company brought suit against the assured to recover \$2,000. The Appellate Division had held that the insurance company was entitled to summary judgment, without the necessity of trial, on this state of facts. The Court of Appeals reversed this judgment, holding that the facts presented a triable issue which might defeat the company's case and hence the company was not entitled to summary judgment without trial.

In coming to this decision the Court of Appeals disposed of several points. The first of these was to the effect that if the assured had received from the railroad company full payment of the same damages for which he had been indemnified previously by the insurance company then the latter was doubtless entitled to judgment against the assured. The court agreed that such was the law but pointed out that the complaint in the action against the railroad company covered personal injuries and property damage other than to the automobile. In this connection, the court said,

"The complaint in the action brought by Greger against the railroad company included a claim for personal injuries and for injury to property other than the automobile. Indeed the complaint is so phrased that it is not entirely clear that it was intended to include any claim for the loss of the automobile. Even a judgment entered upon a general verdict in an action which was brought to recover every loss suffered by negligence of the railroad company might not allow the inference that the judgment included the full sum paid to the insured for the loss of the automobile. *Costello vs. New York Cent. & H. R. R. Co.* 238 N. Y. 240, 144 N. E. 514. Here no verdict was rendered, and it is not claimed that the amount paid by the railroad company to Greger represented more than a compromise of a disputed liability, and no inference can be drawn that it constituted a full payment for damages suffered. The judgment in the present action in favor of the insurance company against Greger can therefore not be sustained upon the theory that Greger has received from the railroad company moneys which equitably belonged to the insurance company."

The Court then dealt with the argument that by his release to the railroad company the assured had destroyed the right of action which the insurance company had against the railroad company. The court pointed out that the right of action was

not destroyed by the release if the railroad company knew of the rights of the insurance company at the time. As there was evidence of such knowledge it was an issue which could only be disposed of by a trial. The court also pointed out that there was a question of fact whether the parties ever contemplated that the release would discharge the railroad company of the automobile damage claim which had already been transferred to the insurance company.

The court then demonstrated that even though it should be shown that the release did discharge the right of action of the insurance company against the railroad company, the insurance company would still have to prove its damages. In order to prove damage, it must show that in fact it might have recovered against the railroad company as a wrongdoer. There was no proof here that the insurance company might have been successful in a suit against the railroad company.

Wrongful Conversion.—[O. M. Gaudy, Inc., vs. North Carolina Home Ins. Co. (No. 20703) Supreme Court of Washington. Oct. 25, 1927. 260 Pac. 257; 70 Ins. L. J. 176.]

A policy of insurance issued to an automobile dealer contained the following provision:

"Perils Insured Against—(c) Theft, robbery or pilferage—excepting also the wrongful conversion, embezzlement, or secretion by a mortgagor or vendee in possession under mortgage, conditional sale or lease agreement* * *"

He also obtained the following rider which took effect at 12 o'clock noon of that day, to wit, October 12, 1925. This rider insured the "vendor against all direct loss or damage which he may sustain caused by the disposal or concealment of said automobile by the said vendee with intent to defraud the same vendor." This rider was intended to protect the assured's interest in an Essex automobile which he had delivered that morning upon a conditional bill of sale. The assured had accepted another automobile in part payment of the Essex. The purchaser had purchased this other automobile in another city and had there given a chattel mortgage on it as part of the purchase price. In trading it in to the assured for the Essex, however, he had represented himself to be the original owner with clear title. The purchaser disappeared on the evening of

October 12, 1925, with the Essex. The assured now sues to recover for the loss of the Essex on the policy and rider.

The Supreme Court of Washington held that the action must be dismissed on the ground that the Essex was stolen when it was delivered, that is several hours before the rider attached and hence there was no subject-matter for it to operate on. In holding this the court cited the Washington statute defining larceny.

"Every person who, with intent to deprive or defraud the owner thereof * * * (2) Shall obtain from the owner or another the possession of or title to any property, real or personal, * * * by color or aid of any fraudulent or false representation, personation or pretense or by any false token or writing or by any trick, device, bunco game or fortune telling, * * * steals such property and shall be guilty of larceny."

"It seems to us the transaction comes directly within the provisions of this statute. If the car was stolen at the time Baker, under the name of Kyle, obtained possession of it on the morning of October 12, then at 12 o'clock on that day, when the policy took effect, there was no subject-matter for it to operate upon. One of the essentials of an insurance contract is that there must exist at the time of its issue the subject-matter which it is intended to cover. If there be no subject-matter in existence, no liability arises by reason of the issuance of the policy. 1 Joyce on the Law of Insurance (2d. Ed.) chap. 43; Ogle Lake Shingle Co. v. National Lumber Ins. Co. 68 Wash. 185, 122 P. 990."

The crux of the decision was whether the car was stolen before or after the rider attached.

"The automobile having been stolen by Baker under the name of Kyle prior to the time when the insurance policy took effect, there is no liability upon it, since at the time it was issued there was no subject-matter upon which it could operate the car prior thereto having been stolen. The theft of the car was complete at the time Baker took it from the respondent's place of business, even though he did not actually depart from the city of Seattle until the evening of that day."

BURGLARY

Excess Insurance.—[*Zeig vs. Massachusetts Bonding & Ins. Co.* Circuit Court of Appeals, Second Circuit. January 9, 1928. No. 101. 23 Fed. (2d) 665; 70 Ins. L. J. 875.]

A policy of burglary insurance which was issued contained the following clause:

"In consideration of the reduced premium charged for the policy to which this indorsement is attached, such policy is issued and accepted:

"1. As excess and not contributing insurance, and shall apply and cover only after all other insurance herein referred to shall have been exhausted in the payment of claims to the full amount of the expressed limits of such other insurance.

"2. Upon the further condition that, if the assured shall fail to carry other insurance against loss or damage of the kind covered hereby in the amount of at least five thousand and 00/100 dollars (\$5,000) at all times while the policy to which this indorsement is attached is in force, then the insurance hereunder shall be null and void."

The assured had three other policies amounting to \$15,000 when a burglary occurred, but settled his claims upon these policies for \$6,000. The Company declined to pay and when this action was brought defended on the ground that the policies had not been "exhausted in the payment of claims to the full amount of the expressed limit of such other insurance." The trial court sustained the contention of the company and directed judgment in its favor. On appeal, the Circuit Court of Appeals reversed the judgment on the ground that a settlement on the other policies was sufficient compliance with the requirement quoted above. In support of its construction the court gave its reasons in the following language:

"The defendant argues that it was necessary for the plaintiff actually to collect the full amount of the policies for \$15,000, in order to 'exhaust' that insurance. Such a construction of the policy sued on seems unnecessarily stringent. It is doubtless true that the parties could impose such a condition precedent to liability upon the policy, if they chose to do so. But the defendant had no rational interest in whether the insured collected the full amount of the primary policies, so long as it was only called upon to pay such portion of the loss as was in excess of the limits of those policies. To require an absolute collection of the primary insurance to its full limit would in many, if not most, cases involve delay, promote litigation, and prevent an adjustment of disputes which is both convenient and commendable. A result harmful to the insured, and of no rational advantages to the insurer, ought only to be reached when the terms of the contract demand it.

"We can see no reason for a construction so burdensome to the insured. Nothing is said about the 'collection' of the full amount of the primary insurance. The clause provides only

that it be 'exhausted in the payment of claims to the full amount of the expressed limits.' The claims are paid to the full amount of the policies, if they are settled and discharged, and the primary insurance is thereby exhausted. There is no need of interpreting the word 'payment' as only relating to payment in cash. It often is used as meaning the satisfaction of a claim by compromise, or in other ways. To render the policy in suit applicable, claims had to be and were satisfied and paid to the full limit of the primary policies. Only such portion of the loss as exceeded, not the cash settlement, but the limits of these policies, is covered by the excess policy.

"We are aware of the fact that there are decisions holding that the words 'exhausted in the payment of claims' require collection of the primary policies as a condition precedent to the right to recover excess insurance. We can see nothing in the clause before us to require a construction so burdensome to the insured, and must accordingly reject such an interpretation.

"The plaintiff should have been allowed to prove the amount of his loss, and, if that loss was greater than the amount of the expressed limits of the primary insurance, he was entitled to recover the excess to the extent of the policy in suit."

Force and Violence:—[Fidelity & Deposit Co. of Maryland *vs.* B. & J. Sales Co. (No. 311) Court of Civil Appeals of Texas. Eastland. May 13, 1927. 298 S. W. 459. 70 Ins. L. J. 182.]

A burglary policy contained, among others, the following provisions:

"I. To indemnify the assured for all loss by burglary occasioned by the abstraction of any such property from the interior of any safe or vault described in the declarations and located in the assured's premises by any person or persons making felonious entry into such safe or vault by actual force and violence, of which force and violence there shall be visible marks made upon such safe or vault by tools, explosives, chemicals or electricity.

"B. The company shall not be liable for loss of money, securities or merchandise contained in a safe or vault that is not burglar-proof unless taken from an inner steel burglar-proof chest closed and locked as hereinafter provided, and opened by actual force and violence as aforesaid, or unless such safe or vault is described and insured hereunder as fireproof only.

"C. The company shall not be liable * * * unless all vault, safe and chest doors are properly closed and locked by a combination or time lock at the time of the loss or damage; nor if

effected by opening the door of any vault, safe or chest by the use of a key or by the manipulation of any lock. * * * ”

The safe had been opened without force but by means of the combination and no marks were left except on a minor compartment which had been forced open but from which no loss had been sustained. The loss was entirely in the portions of the safe exclusive of the minor compartment. An action was brought on the policy and the Court in ordering judgment for the company expressed itself as follows:

“The policy, by its indemnity paragraph I, first quoted, clearly covers loss of money, etc., taken from the interior of each class of safes aforesaid, provided access to the money was gained by a felonious entry into such safe by actual force and violence, of which force and violence there shall be visible marks made upon such safe by tools, explosives, chemicals, or electricity, and no doubt as to the policy's coverage is created by a later provision therein expressly providing that loss shall not be covered if the same is ‘effected by opening the door of any vault, safe, or chest by the use of a key or by the manipulation of any lock.’ The indemnity provision and the provision of exclusion confirm each other, are not conflicting or ambiguous when taken together, and there is no occasion for the application of the well known rule of construction which requires doubtful or ambiguous language found in policies of insurance to be construed most strongly against the insurer. The language of the policy is clear in its meaning. U. S. Casualty Company v. Medcalf (Tex. Civ. App.) 272 S. W. 539; British American Assur. Co. v. Miller, 91 Tex. 414, 44 S. W. 60.”

Occupancy by Tenant:—[National Surety Co. of New York vs. Fox (No. 161) Supreme Court of Arkansas. July 11, 1927. 296 S. W. 718; 69 Ins. Law Journal 1124.]

In this action on a burglary policy the company defended on the ground, among others, that the premises were not occupied by the assured at the time of the burglary but by a tenant, who stole the property. The policy covered loss by burglary, theft, or larceny of the property insured thereunder from within the house occupied by assured. The assured had let the premises and told the agent who wrote the policy of that fact. The Supreme Court of Arkansas held that under the facts there was a waiver of the forfeiture and that the assured could recover without having to prove that the tenant did not steal the property. As to the waiver, the court said,

"The above case cites many authorities on the question of forfeiture and cases upholding the rule above announced. But we do not deem it necessary to cite them here or to call attention to any additional cases. We have concluded that, when the insured notified the insurance company's general agent and the agent made the statement that Fox testified he did make, the insurance company could not thereafter declare a forfeiture or defeat recovery because of the occupancy of the house by the tenant. It will be remembered that the agent does not deny that Mr. Fox told him what Fox testifies that he did, and does not deny that he made the statement which Fox says he made. It may be that the insurance company preferred to have a tenant rather than to have the premises unoccupied. The policy provides for the house to remain unoccupied for a longer period than Fox intended to be away, and the insurance company may have preferred to have a tenant rather than to have it unoccupied. It may have thought that burglary was more likely to occur if the house was unoccupied than if it were occupied by a tenant. At any rate, the plaintiff swears that he notified the agent and the agent does not dispute it and the insurance company could not declare a forfeiture under such circumstances."

On the question of whether the tenant stole the property, the court said,

"When Fox returned he found that certain articles were gone. About the only proof that could be made as to burglary or larceny, ordinarily, would be that the doors or windows were open and that articles that were in the house before were missing and could not be found. This was sufficient proof that they had been stolen, and we think that the proof that the tenant stole some of them does not warrant the conclusion that he stole the others. And, while the burden was on the plaintiff to show the larceny of the articles, he was not required to show who stole them and was not required to show that the tenant did not steal them. When the plaintiff shows by evidence that the house was open and that the goods that were in there prior to the time Fox left were missing, we think this is sufficient evidence to justify the court in finding that the articles were stolen."

WORKMEN'S COMPENSATION

Injury due to Earthquake.—[London Guarantee & Accident Co. Ltd. *vs.* Industrial Accident Comm. of Cal. (Supreme Court of California. Sept. 30, 1927.) 259 Pacific 1096; 7 Compensation Review 6.]

A janitor was killed during the Santa Barbara earthquake of 1925 by the collapse of the walls of the building in his charge while

he was performing services arising out of his employment. There was evidence before the Industrial Commission that the concrete in the re-enforced concrete in the building had been insufficiently mixed and that the cement was of an inferior grade. There was also evidence that neighboring buildings had not been seriously damaged. On the other hand there was evidence that the construction of the building was up to standard and that a scientific test of samples of the cement used revealed a sustaining strength of more than 1400 pounds whereas the general average of all standards of cement is 1000 pounds. The Commission allowed an award and an appeal was taken. The Appellate Court affirmed the award on the principle that the injury was not caused exclusively by acts of God making the whole occurrence "humanized." If the exclusive cause was by act of God there could be no compensation, but when the effect was in part the result of the participation of man, the part attributed to the earthquake must be eliminated. The evidence of inferior construction was sufficient evidence of human participation to support the award.

Posthumous Illegitimate Child.—[*Sanders et al vs. Fork Ridge Coal & Coke Co.* (Supreme Court of Tennessee. Nov. 21, 1927.) 299 Southwestern 795, 7 Compensation Review 383.]

The question in this case was whether a posthumous illegitimate child is entitled to a share in the fund due to the dependents of the deceased employee under the Workmen's Compensation Act of Tennessee. The employee had entered into a bigamous marriage with the mother of the posthumous child and continued secretly to support his wife and legitimate children. The Supreme Court of Tennessee held that the posthumous illegitimate child was not entitled to a share in the fund. The court recognized that a posthumous legitimate child would share in the fund because of the conclusive presumption of dependency in favor of a child under the age of 16 years. And the court approved the recent Tennessee decision that an illegitimate child supported by a deceased employee was a dependent entitled to compensation under the Tennessee Statute.

In the case of a posthumous illegitimate child, however, the child obviously had never been supported by the employee thus leaving the case without the scope of the decision which had

allowed an award to an illegitimate child which had actually been supported by the employee at the time of his death. Furthermore there was no presumption of dependency in the case of the illegitimate child under the age of 16 years and hence the presumption applicable to the legitimate posthumous child did not apply in this case.

The court took the occasion to distinguish an English case which seemed to be to the contrary effect, in the following language:

"Counsel rely on two English cases. *Williams v. Ocean Coal Co.*, (1907) 2K. B. 422, and *Schofield v. Orrell Colliery Co.*, (1909) A. C. 433.

"In *Williams v. Ocean Coal Co.*, *supra*, the court held that a legitimate posthumous child came within the benefits of the English compensation statute. This was on the theory that a child *en ventre sa mère* was deemed born so far as necessary for the benefit of such unborn child. This case could easily be followed in Tennessee. There being a conclusive presumption of dependency in favor of a child under the age of 16 years, and treating an unborn child as though born, a legitimate posthumous child could readily be brought under our statute.

"The case of *Schofield v. Orrell Colliery Co.*, *supra*, was not elaborated in the House of Lords. That tribunal merely adopted the opinions in the Court of Appeals, King's Bench Division. See (1909) K. B. 1, 178. In that case it was held that a posthumous illegitimate child might be a dependent within the Workmen's Compensation Act. It was pointed out in the opinion of Cozens-Hardy, M. R., that the English Compensation Act of 1906, had many peculiarities which would not be found in any other act, and that 'for many purposes it puts an illegitimate child in the same position as a legitimate child, and it does that in language which is remarkable.* * * The definition of dependents in the act of 1909 goes on, and where the workman being the parent or grandparent of an illegitimate child, leaves such a child so dependent upon his earnings * * * shall include such an illegitimate child'—that is to say, the illegitimate child is made a member of the family to the same extent as the legitimate child actually born at the time of the death."

From the quotation just made, it is obvious that the case last mentioned is no authority here. Our statute contains no such provision as the English statute. For an illegitimate child to enjoy the benefits of our Compensation Act, he must have come into being and have been actually supported by his father, the deceased employee.

Fortuitous Event.—[Depre vs. Pacific Coast Forge Co. (No. 20508) (Supreme Court Washington Oct. 4, 1927) 259 Pac. 720; 6 Comp. Rev. 761.]

This action was brought by an employee against his employer for damages. The complaint alleged negligence in that the employer failed to provide sufficient ventilation in a room where there was a tank into which was poured each day a large quantity of sulphuric acid and muriatic acid. The damage was injury to the employee's lungs from inhaling the acid fumes resulting in a lessening of resistance to tuberculosis which disease was contracted. The employer interposed a demurrer claiming that the Workmen's Compensation Act of Washington was a complete defense. The trial court sustained the demurrer and dismissed the complaint. The employee appealed with the result that the judgment was reversed and the case remanded for trial. The holding therefor is that the facts alleged constituted a good cause of action and if proven the employee was entitled to judgment. In other words the injury was not covered by the Workmen's Compensation Law.

The Washington Compensation Law contains the following provision:

"The words 'injury' or 'injured' as used in this act refer only to an injury resulting from some fortuitous event as distinguished from the contraction of disease . . ."

The crux of the decision was the meaning of the words "fortuitous event". Concerning them the court said,

"We have had occasion to interpret the phrase 'fortuitous event' as used in the act. In Zappala v. Industrial Insurance Commission, 82 Wash. 314, 144 P. 54, L. R. A. 1916A, 295, it is defined as follows:

"* * * Fortuitous is defined as: 'Occurring by chance as opposed to design; coming or taking place without any cause; accidental; casual; and a fortuitous cause is said to be, 'a contingent or accidental cause.' Standard Dictionary.

"So that, so far as concerns the class of injuries for which acts of this character provide compensation, no sound distinction can be made between those resulting from accident and those resulting from some fortuitous event. * * *"

"In every case in which it has been necessary for this court to determine if there had been an injury resulting from a fortuitous event there has been a sudden happening which immediately and directly caused bodily harm. An investigation of the act

discloses that in most of the sections the injury sought to be compensated for is referred to as an 'accident.' It would be useless to attempt to reconcile our holdings along this line with some of the cases from other courts cited by respondent. An example of these is *Victory Sparkler & Specialty Co. v. Francks*, 147 Md.-368, 128 A. 635, 44 A. L. R. 363. There the plaintiff had contracted phosphorus poisoning by inhaling fumes negligently permitted to accumulate in the room where he worked. The appellate court held the injury to be an accident within the purview of the act. That decision appears to be contrary to the weight of authority. The expressions used in many of the cited cases are so conflicting that to try to reach a sound distinction between the various holdings would be futile. We think it sufficient to adhere to our former holding that 'fortuitous event' and 'accident' as used in the act are synonymous, and that to receive compensation from the state there must be some unexpected or sudden happening from which a report or claim can be made which is referable to a definite time, place, and cause."

PUBLIC LIABILITY

Alterations and Repairs:—[United States Fidelity & Guaranty Co. vs. Southland Life Ins. Co., Circuit Court of Appeals, Fifth Circuit, December 8, 1927. 22 Fed. (2d) 731, 70 Ins. L. J. 678.]

A policy which was issued to insure against public liability contained the following clause.

"The Company's liability for loss from an accident resulting in bodily injuries to or in the death of one person is limited to ten thousand and no/100 (10,000) dollars. * * * Privilege is granted under this policy to make such repairs and ordinary alterations as are necessary to the care of the premises and their maintenance in good condition, including ordinary repairs of the elevator and escalator plant and the renewal of its existing mechanical equipment, but this policy does not cover on account of injuries or death caused to or by any person engaged in the making of alterations or additions of a structural character, unless a written permit is granted by the company specifically describing the work, and an additional premium paid therefor. * * * No erasure or change appearing on this policy as originally printed and no change or waiver of any of its terms or conditions or statements, whether made before or after the date of this policy, shall be valid unless set forth in an indorsement added hereto and signed by the president, a vice president, or one of the secretaries of the company. Notice given to or the knowledge of any agent or any other person, whether received or acquired before or after the date of this policy, shall not be held to waive

any of the terms or conditions or statements of this policy or to preclude the company from asserting any defense under said terms, conditions and statements, unless set forth in an indorsement added hereto and signed by the president, a vice-president, or one of the secretaries of the company."

The assured paid \$10,000 to the estate of a person killed by the falling of a window weight while workmen were engaged in putting steel frames in a window in place of the wood frames already there. The changes were being made in accordance with a rearrangement of partitions on this floor and the construction of a fire-proof vault. Before these changes were started the floor as it previously existed was in good condition, needing no repairs. The assured brought action against the company for the amount paid in settlement. At the trial it put in evidence, over the company's objection of a conversation between the assured and the agent prior to the issuing of the present policy in which the assured asked for permission to make the changes and the agent informed the assured that permission was unnecessary.

The assured obtained judgment after trial. This judgment was reversed on the ground that it was error to admit the evidence referred to. In deciding this the Court said:

"As the evidence without conflict showed that the fifth floor of the insured's building, as it was before the above-mentioned changes were made, was in good condition and needed no repairs, and that those changes were made, not because they were necessary to the care of the premises and their maintenance in good condition, but for the purpose of making that floor suitable for uses different from those to which previously it was put, there seems to be no substantial basis for a contention that, in the absence of the granting of the prescribed permit, the insurer was liable under the policy for a death caused by a person engaged in making those alterations. Furthermore, we are of opinion that the above-mentioned changes in the fifth floor of the building involved 'the making of alterations or additions of a structural character,' within the meaning of the provision in question.

"Evidently the just-quoted language was intended to cover alterations other than such * * * ordinary alterations as are necessary to the care of the premises and their maintenance in good condition. The word 'structure' is used to describe any production or piece of work artificially built up, or composed of parts joined together in some definite manner. 37 Cyc. 337. The entirely new vault was none the less a structure because it was erected in an already existing building. *Lewis v. State*, 69

Ohio St. 473, 69 N. E. 980; *Home Mixture Guano Co. v. Ocean Accident & G. Corp.* (C. C.) 176 F. 600. The changes made in windows of the building, by substituting steel frames and sashes for wooden ones, and wire glass for ordinary glass, for the purpose of making the vault fireproof, were changes of component parts of the building as it previously existed, and were structural alterations, within the meaning of the provision in question. It follows that the court erred in giving to the jury the above-mentioned instructions.

"Under the last above set out provision of the policy, nothing done or said by an agent of the insurer, before or after the date of the policy, which is not set forth in an indorsement signed by a named official and added to the policy, was effective to change the policy, to waive a condition thereof, or to preclude the insurer from setting up any defense under its terms. *Fire Association of Philadelphia v. Nime* (C. C. A.) 9 F. (2d) 28. It follows that the court erred in admitting, over the insurer's objection, the above set out statement of a witness for the insured."

OBITUARY

ABB LANDIS

1856—1927

Abb Landis, a Fellow of this Society since 1915, died at Nashville, Tennessee, December 9, 1927. He was born in Bedford County, Tennessee, on August 9, 1856, and was the son of Major A. L. Landis, a planter and large slave owner whose estate was lost during the Civil War.

Mr. Landis was graduated from the University of Nashville in 1875, Vanderbilt University in 1876, and Cumberland Law School in 1879. After practising law for several years he became, in 1883, the owner of the *Nashville Banner* in the columns of which he waged a vigorous battle against the political abuses of his day, more especially the convict lease system. In 1889 he became interested in fraternal insurance and the rest of his life was devoted to efforts to substitute sound actuarial principles for the falacious ones which were prevalent during that period in the financial structure of fraternal societies.

He was the author of several books on the actuarial aspects of the fraternal insurance system and, as a lawyer, had argued important fraternal cases in the courts, including the United States Supreme Court. He was influential in the construction and graduation of the National Fraternal Congress Table of Mortality, and in the drafting of the "New York Conference" fraternal law. While he was not personally known to many of the members of this Society, there was probably no better known person connected with fraternal insurance in America. Mr. Landis was a skilled technician, a forceful and picturesque speaker, and his great services in connection with the readjustment of many fraternal societies can only be justly appreciated by those who have had some practical acquaintance with the human difficulties which those problems involve.

S. HERBERT WOLFE

1874—1927

General S. Herbert Wolfe, one of the original founders and charter members of this Society died on December 31, 1927 after a short illness.

General Wolfe was educated in the public schools at New York and Baltimore and the College of the City of New York. He was graduated from college as an electrical engineer. In 1893 he entered the employ of the Actuarial Department of the Netherland Life Insurance Company which was then starting to do business in this country and soon came under the notice of Mr. William D. Whiting, at that time the consulting actuary of the Connecticut Insurance Department. On Mr. Whiting's death, General Wolfe became the actuary of the Connecticut Insurance Department and, as such, made numerous examinations of some of the large Connecticut institutions.

He had been in consulting practice since 1895 and his work attracted national attention, especially among state insurance departments. No large actuarial problem has arisen in a number of years in which General Wolfe was not interested in one way or another.

When the World War started, he was commissioned a Captain in the Reserve Corps and took charge of the insurance in connection with the construction of cantonments. In June, 1917, he was sent to Canada to observe the way in which the Canadian Government was caring for the dependents of its soldiers and on his return, in conjunction with Federal Judge Julian Mack and Samuel Gompers, the War Risk Insurance Bill was written. Before the Bill was finally passed, General Wolfe, who was at that time a Captain was sent to France to organize the War Risk Insurance Bureau abroad in contemplation of the passage of the act in this country. He remained abroad until January 1918 and on his return was the official representative on the War Risk Bureau. He later became Chief of Staff to General Herbert M. Lord and Assistant Director of Finance of the United States Army. By the time the war was over, he had advanced to the grade of Colonel and in 1921 was appointed Brigadier General in the Officers Reserve Corps. General Wolfe received the Distinguished Service Cross, the Cross of the Legion of Honor and the Masonic Peace Medal issued by King George of England.

He was the author of numerous articles on insurance and of "The Examination of Insurance Companies" and "Wolfe's Inheritance Tax Calculations."

He was a member of the Council of this Society in 1916 and again in 1919 and had contributed to the *Proceedings*.

General Wolfe's remarkable ability, fine character and pleasing personality are well known to all members of this Society. Most of us were so fortunate as to enjoy his close personal friendship. His sudden death takes from us an outstanding actuary, a sterling gentleman and a loyal friend.

THOMAS P. KEARNEY

1892—1928

Thomas P. Kearney was born in Brooklyn, New York, in 1892 and died in Denver, Colorado, February 11, 1928. He began his insurance career when a young man in Hartford with the Travelers Insurance Company.

In 1913, he moved to Colorado, continuing to work in the field of casualty insurance; and when the Compensation Act of Colorado became effective in 1915, he joined the staff of the State Compensation Insurance Fund.

Mr. Kearney continued with the Fund until the time of his death except for a period of about two years during which he was connected with the Denver general agency of the Hartford Accident and Indemnity Company. In 1915, he became Manager of the Fund. In November 1921, he became a Fellow of the Casualty Actuarial Society by examination.

Tom Kearney was an insurance man of sound instincts. It is cause for deep regret that he has left us too soon to have completed his full contribution to the business.

JOSEPH HOOKER WOODWARD

1882—1928

Joseph Hooker Woodward, was born in Hartford, Connecticut on March 7, 1882. He was graduated from Yale in 1903 and was a student at the Harvard Law School for the following year. After entering the employ of the Travelers Insurance Company he was appointed the Actuary of the Connecticut Insurance Department in 1906. Receiving the appointment of Actuary of the New York Department in 1908 he held this position until 1914 when he received the appointment of Chief Actuary for the New York State Industrial Commission. He was also active

in 1914 in the organization of the Compensation Inspection Rating Board and served as a treasurer of the Board in the early period of its life. Subsequently he served as Associate Actuary of the Guardian Life Insurance Company from 1918 to 1920 and as Assistant Actuary of the Equitable Life Assurance Society from 1920 to 1922. He then became one of the founders of the firm of Woodward, Fondiller and Ryan, Consulting Actuaries, in which profession he remained until his death.

In 1907 he became a Fellow by examination of the Actuarial Society of America, which organization he served as a member of the Council from 1913 to 1916 and again from 1919 to 1922. He contributed a number of papers to the *Transactions* of the Actuarial Society of America.


At the time of the organization of the Casualty Actuarial Society in 1914 Mr. Woodward had achieved great prominence in the casualty actuarial profession and had contributed technical papers which evidenced his keen interest in that field. It is not surprising therefore that as a charter member he was active in the organization work as is shown by the Minutes of the first meeting in connection with the drawing up of the Constitution, the establishment of a library and the setting up of the examination system. He served as a member of the Council from 1915 to 1916, as Vice-President from 1916 to 1918, and was elected the third president of the Society from 1918 to 1919. A perusal of the *Proceedings* shows that he was a most active member in connection with the contribution of original papers.

He was also a Fellow of the American Institute of Actuaries, a member of the Fraternal Actuarial Association, a member of the committee of actuaries appointed by the Secretary of the Treasury to advise with reference to War Risk Insurance in 1917, and a member of the American Mathematical Society.

To few men has come the opportunity to serve in so many fields of actuarial endeavor. Mr. Woodward had at one time or another served in both public and private employment, in consulting work, had dealt with problems in life insurance, in numerous branches of casualty insurance, in fraternal insurance and in the field of pensions. Arising out of this broad experience he gave freely of his time and energy to the advancement of the

actuarial profession in the preparation of numerous papers. His passing is a distinct loss to the profession.

Mr. Woodward had a wide acquaintance with actuaries and executives in all the branches of insurance, many of whom he counted among his personal friends. He was always ready to assist the younger men in the profession with words of advice and instruction. His untimely death on May 15, 1928 from pneumonia after an illness of a few days came as a severe shock to all those who were privileged to know him.



CASUALTY ACTUARIAL SOCIETY

MAY 25, 1928

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*Terms expire at the annual meeting in November, 1928.

†Terms expire at the annual meeting in November of the year given.

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ABSTRACT FROM THE MINUTES OF THE MEETING MAY 25, 1928

The semi-annual (thirtieth regular) meeting of the Casualty Actuarial Society was held at the Benjamin Franklin Hotel, Philadelphia, Pa., on May 25, 1928.

President Perkins called the meeting to order at 10:20 A. M., daylight saving time. The roll was called showing the following thirty Fellows and nineteen Associates present:

FELLOWS

BAILEY	FONDILLER	NICHOLAS
BARBER	GINSBURGH	PERKINS
BLANCHARD	GREENE	PINNEY
BROWN, F. S.	HAMMOND	RIEGEL
BUDLONG	HAUGH	ROEBER
COGSWELL	KOPF	RUBINOW
CORCORAN	MATTHEWS	SCHEITLIN
DORWEILER	McMANUS	TARBELL
DUNLAP	MELTZER	VAN TUYL
FARRER	MOORE, G. D.	YOUNG, C. N.

ASSOCIATES

BUGBEE	HALL, L. L.	SIBLEY
BURLING	MARSH	SKELDING
COMSTOCK	MARSHALL	SMITH, A. G.
DAVIES	MILNE	VALERIUS
FITZGERALD	PENNOCK	WILKINSON
GILDEA	POISSANT	WOOD, M. J.
	SAWYER	

President Perkins read his presidential address.

The minutes of the meeting held November 18, 1927 were approved as printed in the *Proceedings*.

The Secretary-Treasurer read the report of the Council and upon motion it was adopted by the Society. Austin F. Allen had been enrolled as an Associate without examination. Applications to take the examinations of the Society must be received by the Secretary-Treasurer before the fifteenth day of February of each year, instead of the first day of March as heretofore.

The President announced the death, since the last meeting of the Society, of the following four Fellows of the Society: Abb Landis, S. Herbert Wolfe, Thomas P. Kearney, and Joseph H. Woodward who was the third president of the Society. The memorial notices appearing in this Number were read for each of these Fellows.

The report of the Committee on Compensation and Liability Loss Reserves (Benedict D. Flynn, Chairman) was read. It offered certain suggestions as to the amendment of Schedule P. Some companies are testing out the suggested formulae and will submit their suggestions to the Committee.

The following topics for which speakers had been selected, were informally discussed:

The Life Indemnity Clause in Personal Accident Policies.

Can Insurance Help the Unemployment Situation?

What Shall be the Future of Schedule Rating Workmen's Compensation Risks?

Recess was taken until 2:15 P. M.

By invitation of the Committee on Program, Mr. Edson S. Lott, President of the United States Casualty Company, New York, addressed the Society on the "Financial Responsibility of Automobile Drivers," and Mr. S. S. Huebner, Professor of Insurance and Commerce, University of Pennsylvania, addressed the Society on "Life and Casualty Insurance in Japan and China." These addresses appear in this Number of the *Proceedings*.

The papers printed in this Number were read or presented.

The papers read at the last meeting of the Society were discussed.

Upon motion, the meeting adjourned at 4:40 P. M., daylight saving time.

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CASUALTY ACTUARIAL SOCIETY

1928 YEAR BOOK

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Constitution and By-Laws

Examination Requirements

1927 Examination Questions

(Corrected to February 1, 1928)

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No. 7

CASUALTY ACTUARIAL SOCIETY

NOVEMBER 18, 1927

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WILLIAM M. CORCORAN

MEMBERSHIP OF THE SOCIETY, NOVEMBER 18, 1927

FELLOWS

Those marked (†) were Charter Members at date of organization, November 7, 1914.

Those marked (*) have been admitted as Fellows upon examination by the Society.

Date Admitted	
†	Amerine, W. M., Assistant Secretary, Georgia Casualty Co., Brown Building, Atlanta, Ga.
May 23, 1924	Bailey, William B., Economist, Travelers Insurance Co., 700 Main St., Hartford, Conn.
*Nov. 20, 1924	Barber, Harmon T., Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	Benjamin, Roland, Treasurer, Fidelity & Deposit Co., Baltimore, Md.
†	Black, S. Bruce, President, Liberty Mutual Insurance Co., Park Square Building, Boston, Mass.
Apr. 20, 1917	Blanchard, Ralph H., Professor of Insurance, School of Business, Columbia University, New York.
May 24, 1921	Bond, Edward J., First Vice-President, Maryland Casualty Co., Baltimore, Md.
May 19, 1915	Bradshaw, Thomas, Vice-President and General Manager, Massey-Harris Co., Limited, 915 King St., Toronto, Canada; President, North American Life Assurance Co. of Canada, Toronto, Canada.
†	Breiby, William, Consulting Actuary, Fackler & Breiby, 50 Broad St., New York.
*Nov. 18, 1927	Brown, F. Stuart, Statistician, Norwich Union Indemnity Co., 75 Maiden Lane, New York.
Oct. 22, 1915	Brown, Herbert D., Chief of U. S. Efficiency Bureau, 408 Winder Building, 17th and F Sts., N.W., Washington, D. C.
Oct. 22, 1915	Brown, William H., Second Vice-President and Secretary, Columbian National Life Insurance Co., 77 Franklin St., Boston, Mass.
June 5, 1925	Brosmith, William, Vice-President and General Counsel, Travelers Insurance Co. and Travelers Indemnity Co., 700 Main St., Hartford, Conn.
†	Buck, George B., Consulting Actuary for Pension Funds, 25 Spruce St., New York.
May 26, 1916	Bucklin, Walter S., President, National Shawmut Bank, 40 Water St., Boston, Mass.
†	Budlong, W. A., Superintendent of Claims, Commercial Travelers Mutual Accident Association, Utica, N. Y.
Apr. 20, 1917	Burhop, W. H., Assistant Manager, Employers Mutual Liability Insurance Co., Wausau, Wis.

FELLOWS

Date Admitted	
Feb. 19, 1915	Burns, F. Highlands, President, Maryland Casualty Co., Baltimore, Md.
†	Cammack, Edmund E., Vice-President and Actuary, Aetna Life Insurance Co., Hartford, Conn.
†	Carpenter, Raymond V., Actuary, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
*Nov. 15, 1918	Coates, Barrett N., Consulting Actuary, 354 Pine St., San Francisco, Calif.
*Nov. 17, 1922	Coates, Clarence S., Federal Mutual Liability Insurance Co., Insurance Center Building, San Francisco, Calif.
Oct. 27, 1916	Cogswell, Edmund S., Consulting Actuary, 161 Devonshire St., Boston, Mass.
Feb. 19, 1915	Collins, Henry, Assistant Manager, Ocean Accident & Guarantee Corporation, 1 Park Ave., New York; Vice-President, Columbia Casualty Co.
†	Copeland, John A., Consulting Actuary, Candler Building, Atlanta, Ga.
*Nov. 18, 1925	Corcoran, William M., Actuary, Connecticut Insurance Department, Hartford, Conn.
†	Cowles, Walter G., Vice-President, Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	Craig, James D., Actuary, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
*Nov. 19, 1926	Crane, Howard G., Assistant Comptroller, General Reinsurance Corporation, 80 John St., New York.
*Nov. 20, 1924	Darkow, Angela C., Independence Indemnity Co., Independence Bldg., Philadelphia, Pa.
*Nov. 18, 1927	Davis, Evelyn, M., Office of Woodward, Fondiller & Ryan, Consulting Actuaries, 75 Fulton St., New York.
†	Dawson, Alfred B., Miles M. Dawson & Son, 36 W. 44th St., New York.
†	Dawson, Miles M., Consulting Actuary and Counsellor at Law, 36 W. 44th St., New York.
†	De Kay, Eckford C., President, De Kay and Company, Inc., Insurance Brokers, 51 Maiden Lane, New York; President, Industrial Service Corporation.
†	Dearth, Elmer H., Detroit Athletic Club, Box 38, Detroit, Mich.
May 19, 1915	Deutschberger, Samuel, Actuary, New York Insurance Department, 165 Broadway, New York.
*Nov. 17, 1920	Dorweiler, Paul, Aetna Life Insurance Co., Hartford, Conn.
†	Dublin, Louis I., Statistician, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
May 19, 1915	Dunlap, Earl O., Assistant Actuary, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
†	Egbert, Lester D., Director, Brown, Crosby & Co., Inc., Insurance Brokers, 96 Wall St., New York.
*Nov. 17, 1922	Elston, James S., Assistant Actuary, Life Department, Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	Epsteen, Saul R., 232 Coronado Building, Denver, Colo.
†	Fackler, Edward B., Consulting Actuary, Fackler & Breiby, 50 Broad St., New York.

FELLOWS

Date Admitted	
†	Fallow, Everett S., Actuary, Accident Department, Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	Farrer, Henry, Assistant Secretary, Independence Companies, Independence Building, Philadelphia, Pa.
Feb. 19, 1915	Fellows, C. W., President, Associated Indemnity Corporation, Wells Fargo Building, San Francisco, Calif.
Feb. 19, 1915	Flanigan, James E., Agency Manager, Bankers Life Co., 225 Broadway, New York.
†	Flynn, Benedict D., Secretary, Travelers Insurance Co., 700 Main St., Hartford, Conn.
Feb. 19, 1915	Fondiller, Richard, Woodward, Fondiller & Ryan, Consulting Actuaries, 75 Fulton St., New York.
†	Forbes, Charles S., Treasurer, Smyth, Sanford and Gerard, Inc., Insurance Brokers, 68 William St., New York.
May 26, 1916	Frankel, Lee K., Second Vice-President, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
†	Franklin, Charles H., Secretary, Continental Casualty Co., 910 South Michigan Ave., Chicago, Ill.
*Nov. 18, 1927	Frederickson, Carl H., Actuary, Canadian Automobile and Casualty Underwriters Association, 330 Bay St., Toronto, Canada.
Feb. 25, 1916	Froggatt, Joseph, President, Joseph Froggatt & Co., Insurance Accountants, 74 Trinity Place, New York.
†	Furze, Harry, Treasurer, Globe Indemnity Co., Washington Park, Newark, N. J.
Feb. 19, 1915	Garrison, Fred S., Assistant Secretary, Travelers Indemnity Co., 700 Main St., Hartford, Conn.
*Nov. 20, 1924	Ginsburgh, Harold J., American Mutual Liability Insurance Co., 142 Berkeley St., Boston, Mass.
May 19, 1915	Glover, James W., Professor of Mathematics and Insurance, University of Michigan, 620 Oxford Road, Ann Arbor, Mich.
†	Goodwin, Edward S., Goodwin-Beach & Co., Brokers, 64 Pearl St., Hartford, Conn.
†	Gould, William H., Consulting Actuary, 75 Fulton St., New York.
*Nov. 19, 1926	Graham, Charles M., Assistant Actuary, State Insurance Fund, 432 Fourth Ave., New York.
Oct. 22, 1915	Graham, George, Vice-President, Central States Life Insurance Co., St. Louis, Mo.
Oct. 22, 1915	Graham, Thompson B., Assistant Secretary, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
†	Graham, William J., Second Vice-President, Equitable Life Assurance Society, 393 Seventh Ave., New York.
May 25, 1923	Granville, William A., Director of Publications, Washington Fidelity National Insurance Co., 1607 Howard St., Chicago, Ill.
†	Greene, Winfield W., Comptroller, General Reinsurance Corporation, 80 John St., New York.
†	Hamilton, Robert C. L., Comptroller, Hartford Accident & Indemnity Co., Hartford, Conn.
†	Hammond, H. Pierson, Assistant Actuary, Life Department, Travelers Insurance Co., Main St., Hartford, Conn.

FELLOWS

Date Admitted	
†	Hansen, Carl M., Vice-President and General Manager, General Reinsurance Corporation, 80 John St., New York.
Oct. 27, 1916	Hardy, Edward R., Assistant Manager, New York Fire Insurance Exchange, 85 John St., New York.
Oct. 22, 1915	Hatch, Leonard W., Member, State Industrial Board, 124 East 28th St., New York.
*Nov. 19, 1926	Haugh, Charles J., Jr., Assistant Actuary, National Bureau of Casualty & Surety Underwriters, 1 Park Ave., New York.
Nov. 17, 1920	Heath, Charles E., Chief Examiner of Casualty Companies, New York Insurance Department, 165 Broadway, New York.
Nov. 21, 1919	Henderson, Robert, Second Vice-President and Actuary, Equitable Life Assurance Society, 393 Seventh Ave., New York.
May 17, 1922	Heron, David, Secretary and Chief Statistician, London Guarantee & Accident Co., Ltd., 20 Lincoln's Inn Fields, London, W. C. 2, England.
Oct. 22, 1915	Hess, Herbert, Herbert Hess & Co., Public Accountants and Auditors, 120 Broadway, New York.
†	Hillas, Robert J., President, Fidelity & Casualty Co., 92 Liberty St., New York.
Nov. 15, 1918	Hinsdale, Frank W., Secretary, Workmen's Compensation Board, Vancouver, B. C., Canada.
May 23, 1924	Hobbs, Clarence W., Special Representative of the National Convention of Insurance Commissioners, National Council on Compensation Insurance, 151 Fifth Ave., New York.
Nov. 19, 1926	Hodges, Charles E., President, American Mutual Liability Insurance Company and Allied American Mutual Automobile Insurance Co., 142 Berkeley St., Boston, Mass.
Oct. 22, 1915	Hodgkins, Lemuel G., Secretary, Massachusetts Protective Association, Worcester, Mass.
†	Hoffman, Frederick L., Consulting Statistician, Prudential Insurance Co.; Research Consultant, Babson Institute, Wellesley Hills, Mass.
Oct. 22, 1915	Holland, Charles H., President, Independence Indemnity Co., Independence Bldg., Philadelphia, Pa.
†	Hughes, Charles, Auditor and Actuary, New York Insurance Department, 165 Broadway, New York.
†	Hunt, Burritt A., Assistant Secretary, Accident & Liability Department, Aetna Life Insurance Co., Hartford, Conn.
†	Hunter, Arthur, Third Vice-President and Chief Actuary, New York Life Insurance Co., 346 Broadway, New York.
Nov. 18, 1921	Hutcheson, William A., Second Vice-President and Actuary, Mutual Life Insurance Co., 32 Nassau St., New York.
Feb. 25, 1916	Jackson, Charles W., Actuary, Postal Life Insurance Co., 511 Fifth Ave., New York.
May 19, 1915	Johnson, William C., Vice-President, Massachusetts Protective Association, Worcester, Mass.
*Nov. 18, 1921	Kearney, Thomas P., Manager, State Compensation Insurance Fund, 230 State Office Building, Colfax and Sherman Sts., Denver, Colo.

FELLOWS

Date Admitted	
*Nov. 19, 1926	Kelton, William H., Assistant Actuary, Life Department, Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	King, Walter I., Vice-President, Connecticut General Life Insurance Co., Hartford, Conn.
*Nov. 21, 1919	Kirkpatrick, A. L., Secretary and Treasurer, Casualty Information Clearing House, 208 So. La Salle St., Chicago, Ill.
†	Kopf, Edwin W., Assistant Statistician, Metropolitan Life Insurance Co., 1 Madison Ave., New York.
Feb. 19, 1915	Laird, John M., Vice-President, Connecticut General Life Insurance Co., 55 Elm St., Hartford, Conn.
Feb. 19, 1915	Landis, Abb, Consulting Actuary, 1107-1110 Independent Life Building, Nashville, Tenn. (Deceased December 9, 1927).
Nov. 17, 1922	Lawrence, Arnette R., Special Deputy Commissioner of Banking and Insurance, 1203 Military Park Building, 60 Park Place, Newark, N. J.
†	Leal, James R., Vice-President and Secretary, Interstate Life and Accident Co., Chattanooga, Tenn.
†	Leslie, William, General Manager, National Council on Compensation Insurance, 151 Fifth Ave., New York.
*Nov. 20, 1924	Linder, Joseph, Office of Woodward, Fondiller & Ryan, Consulting Actuaries, 75 Fulton St., New York.
Nov. 18, 1921	Little, James F., Associate Actuary, Prudential Insurance Co., Newark, N. J.
Feb. 19, 1915	Maddrill, James D., Vice-President—General Manager, Union Labor Life Insurance Co., 1701 Connecticut Ave., N. W., Washington, D. C.
†	Magoun, William N., General Manager, Massachusetts Rating & Inspection Bureau, 80 Broad St., Boston, Mass.
*Nov. 18, 1927	Masterson, Norton E., Actuary, Hardware Mutual Casualty Co., Stevens Point, Wis.
*Nov. 19, 1926	Matthews, Arthur N., Travelers Insurance Co., 700 Main St., Hartford, Conn.
May 19, 1915	Maycrink, Emma C., Examiner, New York Insurance Department, 165 Broadway, New York.
*Nov. 16, 1923	McClurg, D. Ralph, Secretary and Treasurer, National Equity Life Insurance Co., Little Rock, Ark.
May 23, 1919	McDougald, Alfred, Ellerslie, Beddington Gardens, Wallington Surrey, England.
*Oct. 31, 1917	McManus, Robert J., Assistant Statistician, Casualty Actuarial Department, Travelers Insurance Co., 700 Main St., Hartford, Conn.
Feb. 19, 1915	Mead, Franklin B., Vice-President, Lincoln National Life Insurance Co., Fort Wayne, Ind.
Apr. 20, 1917	Meltzer, Marcus, Statistician, National Bureau of Casualty and Surety Underwriters, 1 Park Ave., New York.
†	Michelbacher, G. F., Vice-President and Secretary, Great American Indemnity Co., 1 Liberty St., New York City.
†	Miller, David W., Assistant Treasurer, S. W. Straus & Co., Investment Bonds, 565 Fifth Ave., New York.
†	Milligan, Samuel, Third Vice-President, Metropolitan Life Insurance Co., 1 Madison Ave., New York.

FELLOWS

Date Admitted	
†	Mitchell, James F., Assistant U. S. Manager, General Accident Fire and Life Assurance Corporation, Ltd., 414 Walnut St., Philadelphia, Pa.
†	Moir, Henry, President, United States Life Insurance Co., 105 Fifth Ave., New York.
*Nov. 18, 1921	Montgomery, Victor, Secretary, Pacific Employers Insurance Co., 621 So. Hope St., Los Angeles, Calif.
Nov. 19, 1926	Mooney, William L., Vice-President, Aetna Life Insurance Co., Hartford, Conn.
†	Moore, George D., Assistant Secretary and Actuary, Royal Indemnity Co. and Eagle Indemnity Co., 150 William St., New York.
May 19, 1915	Morris, Edward B., Actuary, Life Department, Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	Morrison, James, Secretary-Treasurer, Independence Indemnity Co., Independence Building, Philadelphia, Pa.
†	Mowbray, Albert H., Consulting Actuary, Berkeley, Calif., Professor of Insurance, University of California, Berkeley, Calif.
May 20, 1918	Mudgett, Bruce D., Professor of Economics, University of Minnesota, Minneapolis, Minn.
*Nov. 17, 1920	Mueller, Louis H., Secretary and Treasurer, Associated Indemnity Corporation, Wells-Fargo Building, San Francisco, Calif.
†	Mullaney, Frank R., Secretary, American Mutual Liability Insurance Co., 142 Berkeley St., Boston, Mass.
May 28, 1920	Murphy, Ray D., Second Vice-President and Associate Actuary, Equitable Life Assurance Society, 393 Seventh Ave., New York.
†	Nicholas, Lewis A., Assistant Secretary, Fidelity & Casualty Co., 92 Liberty St., New York.
†	Olifiers, Edward, Consulting Actuary, P. O. Box 1817, Rio-de-Janeiro, Brazil.
Nov. 18, 1927	O'Neill, Frank J., President, Royal Indemnity Co. and Eagle Indemnity Co., 150 William St., New York.
†	Orr, Robert K., President, Wolverine Insurance Co., Lansing, Mich.
†	Otis, Stanley L., Counsellor at Law, 110 William St., New York.
*Nov. 21, 1919	Outwater, Olive E., The Maccabees, Detroit, Mich.
Nov. 19, 1926	Page, Bertrand A., Vice-President, The Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	Pallay, Julius J., Special Agent, Equitable Life Assurance Society, 1328 Broadway, New York City.
*Nov. 18, 1921	Perkins, Sanford B., Assistant Secretary, Travelers Insurance Co., 700 Main St., Hartford, Conn.
Nov. 15, 1918	Perry, W. T., Assistant Manager, Ocean Accident and Guarantee Corporation, 36 Moorgate, London, E. C. 2, England.
Nov. 19, 1926	Phillips, Jesse S., President, Great American Indemnity Co., 1 Liberty St., New York.
*Nov. 17, 1922	Pinney, Sydney D., Associate Actuary, Casualty Actuarial Department, Travelers Insurance Co., 700 Main St., Hartford, Conn.

FELLOWS

Date Admitted	
May 13, 1927	Reid, A. Duncan, President and General Manager, Globe Indemnity Co., Washington Park, Newark, N. J.
†	Remington, Charles H., Insurance Counselor and Advisor, Suite 1801-1805, French Building, 551 Fifth Ave., New York.
May 23, 1919	Richardson, Frederick, U. S. Manager, General Accident Fire and Life Assurance Corporation, 414 Walnut St., Philadelphia, Pa.
*Nov. 19, 1926	Richter, Otto C., American Telephone & Telegraph Co., 195 Broadway, New York.
May 24, 1921	Riegel, Robert, Professor of Insurance, University of Pennsylvania, Philadelphia, Pa.
*Nov. 16, 1923	Roeber, William F., Actuary, National Council on Compensation Insurance, 151 Fifth Ave., New York.
†	Rubinow, Isaac M., Executive Director, Jewish Welfare Society, 330 South Ninth St., Philadelphia, Pa.; Consulting Statistician and Actuary.
†	Ryan, Harwood E., Woodward, Fondiller & Ryan, Consulting Actuaries, 75 Fulton St., New York.
†	Scheitlin, E., Assistant Treasurer, Globe Indemnity Co., Washington Park, Newark, N. J.
†	Senior, Leon S., Manager and Secretary, Compensation Inspection Rating Board, 370 Seventh Ave., New York.
Apr. 20, 1917	Smith, Charles G., Manager, State Insurance Fund, 432 Fourth Ave., New York.
Nov. 18, 1927	Stone, Edward C., U. S. Manager, Employers' Liability Assurance Corporation, Limited, 110 Milk St., Boston, Mass.; and President, American Employers' Insurance Company.
Feb. 25, 1916	Strong, Wendell M., Associate Actuary, Mutual Life Insurance Co., 32 Nassau St., New York.
Oct. 22, 1915	Strong, William Richard, No. 4 "Sheringham," Cotham Road, Kew, Victoria, Australia.
†	Sullivan, Robert J., Vice-President, Travelers Insurance Co. and Travelers Indemnity Co., 700 Main St., Hartford, Conn.
*Nov. 17, 1920	Tarbell, Thomas F., Actuary, Casualty Actuarial Department, Travelers Insurance Co., 700 Main St., Hartford, Conn.
†	Thompson, John S., Vice-President and Mathematician, Mutual Benefit Life Insurance Co., 300 Broadway, Newark, N. J.
Nov. 18, 1921	Toja, Guido, Professor of Financial and Actuarial Mathematics, University of Florence, Florence, Italy.
†	Train, John L., Secretary and General Manager, Utica Mutual Insurance Co., 185 Genesee St., Utica, N. Y.
Nov. 17, 1922	Traversi, Antonio T., Amritsar Street, Khandallah, Wellington, New Zealand.
*Nov. 21, 1919	Van Tuyl, Hiram O., Actuary, Constitution Indemnity Company of Philadelphia, Independence Building, Independence Square, Philadelphia, Pa.

FELLOWS

Date Admitted	
*Nov. 17, 1920	Waite, Alan W., Chief Underwriter, Accident and Liability Department, Aetna Life Insurance Co., Hartford, Conn.
*Nov. 18, 1925	Warren, Lloyd A. H., Professor of Mathematics, University of Manitoba, Winnipeg, Manitoba, Canada.
May 23, 1919	Welch, Archibald A., President, Phoenix Mutual Life Insurance Co., Hartford, Conn.
Nov. 19, 1926	Wheeler, Roy A., Vice-President and Actuary, Liberty Mutual Insurance Co., Park Square Building, Boston, Mass.
†	Whitney, Albert W., Associate General Manager and Actuary, National Bureau of Casualty & Surety Underwriters, 1 Park Ave., New York.
†	Wolfe, Lee J., Consulting Actuary, 165 Broadway, New York.
†	Wolfe, S. Herbert, Consulting Actuary, 165 Broadway, New York. (Deceased December 31, 1927.)
May 24, 1921	Wood, Arthur B., Vice-President and Actuary, Sun Life Assurance Co., Montreal, Canada.
†	Woodward, Joseph H., Woodward, Fondiller & Ryan, Consulting Actuaries, 75 Fulton St., New York.
*Nov. 17, 1920	Young, Charles N., Manager, Safety Engineering Department, Constitution Indemnity Company of Philadelphia, Independence Building, Philadelphia, Pa.

ASSOCIATES

Those marked (*) have been enrolled as Associates upon examination by the Society.

Those marked (1) or (2) have passed Part I or Part II of the Fellowship Examination.

Date Enrolled	
May 23, 1924	Acker, Milton, Manager, Compensation and Liability Department, National Bureau of Casualty and Surety Underwriters, 1 Park Ave., New York.
*Nov. 15, 1918	Ackerman, Saul B., Assistant Professor of Insurance, New York University, 32 Waverly Place, New York.
*Nov. 15, 1918	Ankers, Robert E., Secretary and Treasurer, Continental Life Insurance Co., District National Bank Building, Washington, D. C.
(1)*Nov.16,1923	Ault, Gilbert E., Office of Woodward, Fondiller & Ryan, Consulting Actuaries, 75 Fulton St., New York.
(1)*Nov.17,1922	Barter, John L., Superintendent Liability Department, Pacific Department, Hartford Accident & Indemnity Co., 720 California St., San Francisco, Calif.
*Nov. 19, 1926	Batho, Elgin R., Bankers Life Company, Des Moines, Iowa.
*Nov. 18, 1925	Bittel, W. Harold, Peoria Life Insurance Co., 410 Main St., Peoria, Ill.
Nov. 17, 1920	Black, Nellas C., Superintendent Statistical Division, Maryland Casualty Co., Baltimore, Md.
Nov. 15, 1918	Brooks, LeRoy, Statistician, U. S. Fidelity & Guaranty Co., Baltimore, Md.
Nov. 20, 1924	Broughton, Thomas W., Zurich General Accident and Liability Co., 175 W. Jackson Boulevard, Chicago, Ill.
*Nov. 15, 1918	Brunnquell, Helmuth G., Actuary, Wisconsin Insurance Department, Madison, Wis.
*Oct. 22, 1915	Buffer, Louis, District Manager, Utica Mutual Insurance Co., 225 West 34th St., New York.
*Nov. 20, 1924	Bugbee, James M., Secretary-Treasurer, The Associated Companies, Hartford, Conn.
*Nov. 18, 1927	Burling, William H., Travelers Insurance Co., 700 Main St., Hartford, Conn.
Mar. 31, 1920	Burt, Margaret A., Office of George B. Buck, Consulting Actuary, 25 Spruce St., New York.
Nov. 17, 1922	Cavanaugh, Leo D., Vice-President and Actuary, Federal Life Insurance Co., 166 N. Michigan Boulevard, Chicago, Ill.
*Nov. 18, 1927	Chen, S. T., Graddon Hall, Larchmont, N. Y.
2)*Nov.17,1920	Comstock, W. Phillips, Statistician, London Guarantee and Accident Co., Ltd., 55 Fifth Ave., New York.
*Nov. 18, 1927	Conrod, Stuart F., Actuarial Department, Great-West Life Assurance Co., Winnipeg, Manitoba, Canada.
*Nov. 18, 1921	Constable, William J., Secretary, Massachusetts Automobile Rating and Accident Prevention Bureau, 80 Broad St., Boston, Mass.

ASSOCIATES

Date Enrolled	
(1)*Nov.19,1926	Davies, E. Alfred, Budget Supervisor, Liberty Mutual Insurance Co., Park Square Building, Boston, Mass.
*Nov. 18, 1925	Davis, Malvin E., Metropolitan Life Insurance Co., 1 Madison Ave., New York.
May 25, 1923	Economidy, Harilaus E., Treasurer, American Indemnity Co., Galveston, Texas.
June 5, 1925	Eger, Frank A., Comptroller, Insurance Company of North America and Affiliated Companies, 1600 Arch St., Philadelphia, Pa.
Nov. 15, 1918	Egli, W. H., Statistician, Zurich General Accident & Liability Insurance Co., 431 Insurance Exchange, Chicago, Ill.
*Nov. 16, 1923	Fitz, L. Leroy, Assistant Actuary, Acacia Mutual Life Association, 601 13th St., Washington, D. C.
(1)*Nov.18,1927	Fitzgerald, A. H., Assistant Actuary, Prudential Insurance Co., Newark, N. J.
*Nov. 16, 1923	Fleming, Frank A., Actuary, American Mutual Alliance, 730 5th Ave., New York.
May 23, 1919	Fletcher, Nicholas, Assistant to Commissioner and Secretary, Workmen's Compensation Board, Winnipeg, Manitoba, Canada.
Nov. 20, 1924	Froberg, John, Superintendent, California Inspection Rating Bureau, San Francisco, Calif.
(1)*Nov.19,1926	Fuller, G. V., Assistant Secretary, National Council on Compensation Insurance, New York City.
*Nov. 17, 1922	Gibson, Joseph P., Jr., Assistant General Manager, Builders and Manufacturers Mutual Casualty Co., State Bank Building, Chicago, Ill.
*Nov. 16, 1923	Gildea, James F., Travelers Insurance Co., 700 Main St., Hartford, Conn.
*Nov. 18, 1927	Green, Walter C., office of B. N. Coates, Consulting Actuary, 354 Pine St., San Francisco, Calif.
*Nov. 18, 1921	Haggard, Robert E., Superintendent, Permanent Disability Rating Department Industrial Accident Commission, State Building, Civic Center, San Francisco, Calif.
*Nov. 17, 1922	Hall, Hartwell L., Assistant Actuary, Connecticut Insurance Department, Hartford, Conn.
Nov. 20, 1924	Hall, Leslie L., Secretary, Rating Department, National Council on Compensation Insurance, 151 Fifth Ave., N. Y.
(2)*Nov.18,1925	Hall, William D., Western Insurance Companies, Fort Scott, Kansas.
(1)*Mar.25,1924	Hart, Ward Van Buren, Assistant Actuary, Connecticut General Life Insurance Co., Hartford, Conn.
Nov. 21, 1919	Haydon, George F., General Manager, Wisconsin Compensation Rating & Inspection Bureau, 110 East Wisconsin Ave., Milwaukee, Wis.
Nov. 17, 1927	Hipp, Grady H., Actuary, New York Insurance Department, Albany, N. Y.
Nov. 18, 1921	Hull, Robert S., Comptroller, Standard Accident Insurance Co., 640 Temple Ave., Detroit, Mich.
*Oct. 31, 1917	Jackson, Edward T., Statistician, General Accident Fire & Life Assurance Corporation, 421 Walnut St., Philadelphia, Pa.

ASSOCIATES

Date Enrolled	
(¹)*Nov.19,1926	Jackson, Henry H., Associate Actuary, National Life Insurance Co., Montpelier, Vt.
(¹)*Nov.18,1927	Jamison, Dorothy M., Assistant Actuary, George Washington Life Insurance Co., Charleston, W. Va.
(²)*Nov.18,1921	Jensen, Edward S., Assistant Actuary, Great Republic Life Insurance Co., Los Angeles, Calif.
*Nov. 21, 1919	Jones, Loring D., Claim Auditor, State Insurance Fund, 432 Fourth Ave., New York.
*Nov. 17, 1922	Kirk, Carl L., Assistant Statistician, Zurich General Accident & Liability Insurance Co., 431 Insurance Exchange, Chicago, Ill.
*Nov. 19, 1926	Kormes, Mark, National Bureau of Casualty and Surety Underwriters, 1 Park Ave., New York.
*Nov. 18, 1925	Malmuth, Jacob, Examiner, New York Insurance Department, 165 Broadway, New York.
Mar. 24, 1927	Marsh, Charles V. R., Comptroller and Assistant Treasurer, Fidelity & Deposit Co. and American Bonding Co., Baltimore, Md.
(¹)*Nov.19,1926	Marshall, Ralph M., National Council on Compensation Insurance, 151 Fifth Ave., New York.
(¹)*Oct. 27,1916	McClure, Laurence H., Assistant Sales Manager, Electrical Division, Colt's Patent Fire Arms Manufacturing Co., Hartford, Conn.
*Nov. 17, 1922	McIver, Rosswell A., Actuary, Washington Fidelity National Insurance Co., 1607 Howard St., Chicago, Ill.
*Nov. 19, 1926	Merkle, Mrs. Grace G., American Telephone & Telegraph Co., 195 Broadway, New York.
(¹)*Nov.17,1922	Michener, Samuel M., Assistant Actuary, Columbus Mutual Life Insurance Co., 580 East Broad St., Columbus, Ohio.
*Nov. 19, 1926	Milne, John L., Actuary, Presbyterian Ministers' Fund for Life Insurance, 1805-7 Walnut St., Philadelphia, Pa.
Nov. 17, 1922	Montgomery, John C., Assistant Secretary and Assistant Treasurer, Bankers Indemnity Insurance Co., 30 Commerce St., Newark, N. J.
May 25, 1923	Moore, Joseph P., President, North American Accident Insurance Co., 275 Craig St., W., Montreal, Canada.
(²)*Nov.21,1919	Mothersill, Roland V., Anchor Casualty Co., 360 Robert St., St. Paul, Minn.
(¹)*Oct. 27,1916	Newell, William, Assistant Secretary, Sun Indemnity Co., 55 Fifth Ave., New York.
*Nov. 18, 1925	Nicholson, Earl H., Assistant Actuary, Inter-Southern Life Insurance Co., Louisville, Ky.
May 23, 1919	Otto, Walter E., Secretary and Treasurer, Michigan Mutual Liability Co., General Necessities Building, Detroit, Mich.
*Nov. 19, 1926	Overholser, Donald M., Alfred M. Best Co., Insurance Publishers, 75 Fulton St., New York City.
Nov. 20, 1924	Pennock, Richard M., Actuary, Pennsylvania Manufacturers Association Casualty Insurance Co., Finance Building, Philadelphia, Pa.
*Nov. 17, 1920	Pike, Morris, Actuary, Judea Life Insurance Co., 44 East 23rd St., New York.
Mar. 24, 1927	Piper, John W., Statistician, Hartford Accident & Indemnity Co., Hartford, Conn.

ASSOCIATES

Date Enrolled	
*Nov. 18, 1927	Poissant, William A., Travelers Insurance Co., 700 Main St., Hartford, Conn.
(¹)*Nov.17,1922	Poorman, William F., Actuary, Central Life Assurance Society, Fifth and Grand Aves., Des Moines, Iowa.
(¹)*Nov.17, 1922	Powell, John M., Actuary, Columbian National Life Insurance Co., 77 Franklin St., Boston, Mass.
*Nov. 18, 1925	Prenner, Myron R., Actuary, Department of Insurance, Bismarck, N. D.
*Nov. 15, 1918	Raywid, Joseph, President, Underwriters Statistical Bureau, Inc., 81 Fulton St., New York.
*Nov. 21, 1919	Robbins, Rainard B., Vice-President—Actuary, Union Labor Life Insurance Co., 1701 Connecticut Ave., N. W., Washington, D. C.
*Nov. 18, 1927	Sarason, Harry M., Missouri State Life Insurance Co., St. Louis, Mo.
Nov. 16, 1923	Sawyer, Arthur, Actuary, London Guarantee & Accident Co., 55 Fifth Ave., New York.
(¹)*Nov.20,1924	Sheppard, Norris E., Lecturer in Mathematics, University of Toronto, Toronto, Canada.
Nov. 15, 1918	Sibley, John L., Statistician, United States Casualty Co., 80 Maiden Lane, New York.
(¹)*Nov.18,1925	Skelding, Albert Z., National Council on Compensation Insurance, 151 Fifth Ave., New York.
*Nov. 19, 1926	Skillings, Edward S., Hartford Accident & Indemnity Co., Hartford, Conn.
*Nov. 18, 1921	Smith, Arthur G., Treasurer & Actuary, Compensation Inspection Rating Board, 370 Seventh Ave., New York.
(¹)*Nov.19,1926	Somerville, William F., Actuary and Underwriter, Anchor Casualty Co., 360 Robert St., St. Paul, Minn.
*Nov. 18, 1925	Sommer, Armand, Manager, Accident and Health Dept., Chicago Branch Office, Standard Accident Insurance Co., 175 West Jackson Blvd., Chicago, Ill.
*Nov. 18, 1927	Speers, A. A., Actuary, Toledo Travelers Life Insurance Co., Toledo, Ohio.
*Nov. 15, 1918	Spencer, Harold S., Aetna Life Insurance Co., Hartford, Conn.
Nov. 20, 1924	Stellwagen, Herbert P., Secretary-Treasurer, National Bureau of Casualty and Surety Underwriters, 1 Park Ave., New York.
*Nov. 16, 1923	Stoke, Kendrick, Michigan Mutual Liability Ins. Co., General Necessities Building, Detroit, Mich.
Mar. 23, 1921	Thompson, Arthur E., Chief Statistician, Globe Indemnity Co., Washington Park, Newark, N. J.
(¹)*Nov.21,1919	Trench, Frederick H., Manager, Underwriting Department, Utica Mutual Insurance Co., 239 Genesee St., Utica, N.Y.
*Nov. 20, 1924	Uhl, M. Elizabeth, National Bureau of Casualty & Surety Underwriters, 1 Park Ave., New York.
*Nov. 18, 1927	Valerius, N. M., Accident & Liability Department, Aetna Life Insurance Co., Hartford, Conn.
May 25, 1923	Vinter, Joseph M., Standard Accident Insurance Co., 640 Temple Ave., Detroit, Mich.
*Nov. 21, 1919	Voogt, Walter G., Actuary, State Insurance Fund, 432 Fourth Ave., New York.

ASSOCIATES

Date Enrolled	
(¹)*Oct. 27, 1916	Waite, Harry V., Statistician, Travelers Fire Insurance Co., 700 Main St., Hartford, Conn.
May 23, 1919	Warren, Charles S., Chief Statistician, Ocean Accident & Guarantee Corporation, Ltd., 1 Park Ave., New York.
Nov. 18, 1925	Washburn, James H., Consulting Actuary, 165 Broadway, New York and Room No. 101, Memorial Building, Nashville, Tenn.
(¹)*Nov. 18, 1921	Waters, Leland L., Secretary-Treasurer, National Accident Insurance Co., Lincoln, Neb.
Nov. 17, 1920	Watson, James J., Vice-President and General Manager, Traders and General Insurance Co., Republic National Bank Building, Dallas, Texas.
*Nov. 18, 1921	Welch, Eugene R., Associated Indemnity Corporation, Wells Fargo Building, San Francisco, Calif.
*Nov. 19, 1926	Welch, George P., Statistician, Fuller Richter, Aldrich & Co., 94 Pearl St., Hartford, Conn.
*Nov. 18, 1925	Wellman, Alexander C., Actuary, Protective Life Insurance Co., Birmingham, Ala.
*Nov. 16, 1923	Wetherald, Dorothy, 4631 Sansom St., Philadelphia, Pa.
*Nov. 18, 1927	Whitbread, Frank G., Great West Life Assurance Co., Winnipeg, Manitoba, Canada.
Nov. 15, 1918	Wilkinson, Albert E., Actuary, Standard Accident Insurance Co., Detroit, Mich.
Sept. 17, 1919	Williams, John F., Vice-President, Illinois Life Insurance Co., 1212 Lake Shore Drive, Chicago, Ill.
*Oct. 22, 1915	Williamson, William R., Assistant Actuary, Life Department, Travelers Insurance Co., 700 Main St., Hartford, Conn.
*Oct. 22, 1915	Wood, Donald M., Childs & Wood, General Agents, Independence Indemnity Co., 175 W. Jackson Blvd., Chicago, Ill.
*Nov. 18, 1927	Wood, Milton J., Travelers Insurance Co., 700 Main St., Hartford, Conn.
*Oct. 22, 1915	Woodman, Charles E., Comptroller, Ocean Accident & Guarantee Corporation, 1 Park Ave., New York.
*Nov. 18, 1925	Woolery, James M., Assistant Actuary, Inter-Southern Life Insurance Co., Louisville, Ky.
*Nov. 17, 1922	Young, Floyd E., Associate Actuary, Western Union Life Insurance Co., 1023 Riverside Ave., Spokane, Wash.

SCHEDULE OF MEMBERSHIP, NOVEMBER 18, 1927

	Fellows	Associates	Total
Membership, November 19, 1926.....	164	104	268
Deductions:			
By resignation.....	1	2	3
By withdrawal.....	—	3	3
By death.....	1	—	1
	162	99	261
Additions:			
By election, May 13, 1927	1	2	3
By election, November 18, 1927 ..	2	1	3
By 1927 examinations.....	4	12	16
	169	114	283
Transfers from Associate to Fellow	—	4	4
Membership, November 18, 1927.....	169	110	279

EX-PRESIDENTS AND EX-VICE-PRESIDENTS

EX-PRESIDENTS

	Term
I. M. RUBINOW.....	1914-1916
JAMES D. CRAIG.....	1916-1918
JOSEPH H. WOODWARD.....	1918-1919
BENEDICT D. FLYNN.....	1919-1920
ALBERT H. MOWBRAY.....	1920-1922
HARWOOD E. RYAN.....	1922-1923
WILLIAM LESLIE.....	1923-1924
G. F. MICHELbacher.....	1924-1926

EX-VICE-PRESIDENTS

	Term
GEORGE D. MOORE.....	1918-1920
LEON S. SENIOR.....	1920-1922
EDMUND E. CAMMACK	1922-1924
SANFORD B. PERKINS.....	1924-1926
RALPH H. BLANCHARD.....	1924-1926

DECEASED MEMBERS

All of the following were Fellows with the exception of those marked * who were Associates.

Date of Death	
Feb. 10, 1920	*Baxter, Don. A., Deputy Insurance Commissioner, Michigan Insurance Department, Lansing, Mich.
Feb. 4, 1920	Case, Gordon, Office of F. J. Haight, Consulting Actuary, Indianapolis, Ind.
July 23, 1921	Conway, Charles T., Vice-President, Liberty Mutual Insurance Co., Boston, Mass.
Jan. 20, 1922	Craig, James McIntosh, Actuary, Metropolitan Life Insurance Co., New York.
Sept. 2, 1921	Crum, Frederick S., Assistant Statistician, Prudential Insurance Co., Newark, N. J.
July 9, 1922	Downey, Ezekiel Hinton, Compensation Actuary, Pennsylvania Insurance Department, Harrisburg, Pa.
Oct. 30, 1924	Fackler, David Parks, Consulting Actuary, New York.
Aug. 22, 1925	Gaty, Theodore E., Vice-President and Secretary, Fidelity & Casualty Co., New York.
Mar. 10, 1924	Hookstadt, Carl, Expert, U. S. Bureau of Labor Statistics, Washington, D. C.
Oct. 15, 1918	Kime, Virgil Morrison, Actuary, Casualty Departments, Travelers Insurance Co., Hartford, Conn.
Dec. 20, 1920	Lubin, Harry, Assistant Actuary, State Industrial Commission, New York.
Aug. 20, 1915	Montgomery, William J., State Actuary, Boston, Mass.
July 24, 1915	Phelps, Edward B., Editor, The American Underwriter, New York.
July 30, 1921	Reiter, Charles Grant, Assistant Actuary, Metropolitan Life Insurance Co., New York.
Feb. 26, 1921	Saxton, Arthur F., Chief Examiner of Casualty Companies, New York Insurance Department, New York.
May 9, 1920	Stone, John T., President, Maryland Casualty Co., Baltimore, Md.
Oct. 23, 1927	Young, William, Actuary, New York Life Insurance Co., New York.

STUDENTS

The following candidates for the grade of Associate have passed one of the two parts of the examination, during the last three years:

Part I only

- ARNDT, RAYMOND A., Secretary-Assistant Treasurer, Bankers National Life Insurance Company of Florida, Herkimer Building, Jacksonville, Fla.
 HONDORP, P., Assistant Actuary, Central Life Assurance Society, Des Moines, Ia.
 IRWIN, J. C. W., Guardian Life Insurance Co., 50 Union Square, New York.
 LOUIS, P. H., 811 Catherine St., Ann Arbor, Mich.
 PRUITT, D. M., 36 Hickory Ave., Maplewood, N. J.
 RAIFORD, T. E., Instructor in Mathematics, University of Michigan, 1512 Granger Ave., Ann Arbor, Mich.
 SHAPIRO, ISRAEL, c/o Woodward, Fondiller & Ryan, 75 Fulton St., New York.

Part II only

- CHRISTENSEN, J., Examiner, New York Insurance Dept., 165 Broadway, New York.
 URE, A. G., Hartford Accident & Indemnity Co., 720 California St., San Francisco, Calif.

CONSTITUTION

(As AMENDED JUNE 5, 1925)

ARTICLE I.—*Name.*

This organization shall be called the CASUALTY ACTUARIAL SOCIETY.

ARTICLE II.—*Object.*

The object of the Society shall be the promotion of actuarial and statistical science as applied to the problems of casualty and social insurance by means of personal intercourse, the presentation and discussion of appropriate papers, the collection of a library and such other means as may be found desirable.

The Society shall take no partisan attitude, by resolution or otherwise, upon any question relating to casualty or social insurance.

ARTICLE III.—*Membership.*

The membership of the Society shall be composed of two classes, Fellows and Associates. Fellows only shall be eligible to office or have the right to vote.

The Fellows of the Society shall be the present members and those who may be duly admitted to Fellowship as hereinafter provided. Any Associate of the Society may apply to the Council for admission to Fellowship. If the application shall be approved by the Council with not more than three negative votes the Associate shall become a Fellow on passing such final examination as the Council may prescribe. Otherwise no one shall be admitted as a Fellow unless recommended by a duly called meeting of the Council with not more than three negative votes followed by a three-fourths ballot of the Fellows present and voting at a meeting of the Society.

Any person may, upon nomination to the Council by two Fellows of the Society and approval by the Council of such nomination with not more than one negative vote, become enrolled as an Associate of the Society, provided that he shall pass such examination as the Council may prescribe. Such examination may be waived in the case of a candidate who for a period of not less than two years has been in responsible charge of the statistical or actuarial department of a casualty insurance organization or has had such other practical experience in casualty or social insurance as in the opinion of the Council renders him qualified for Associateship.

ARTICLE IV.—*Officers and Council.*

The officers of the Society shall be a President, two Vice-Presidents, a Secretary-Treasurer, an Editor, and a Librarian. The Council shall be composed of the active officers, nine other Fellows and, during the four years following the expiration of their terms of office, the ex-Presidents and ex-Vice-Presidents.

CONSTITUTION

ARTICLE V.—*Election of Officers and Council.*

The President, Vice-Presidents, and the Secretary-Treasurer shall be elected by a majority ballot at the annual meeting for the term of one year and three members of the Council shall, in a similar manner, be annually elected to serve for three years. The Editor and the Librarian shall be elected annually by the Council at the Council meeting preceding the annual meeting of the Society. They shall be subject to confirmation by majority ballot of the Society at the annual meeting.

The terms of the officers shall begin at the close of the meeting at which they are elected except that the retiring Editor shall retain the powers and duties of office so long as may be necessary to complete the then current issue of *Proceedings*.

ARTICLE VI.—*Duties of Officers and Council.*

The duties of the officers shall be such as usually appertain to their respective offices or may be specified in the by-laws. The duties of the Council shall be to pass upon candidates for membership, to decide upon papers offered for reading at the meetings, to supervise the examination of candidates and prescribe fees therefor, to call meetings, and, in general, through the appointment of committees and otherwise, to manage the affairs of the Society.

ARTICLE VII.—*Meetings.*

There shall be an annual meeting of the Society on such date in the month of November as may be fixed by the Council in each year, but other meetings may be called by the Council from time to time and shall be called by the President at any time upon the written request of ten Fellows. At least two weeks' notice of all meetings shall be given by the Secretary.

ARTICLE VIII.—*Quorum.*

Seven members of the Council shall constitute a quorum. Twenty Fellows of the Society shall constitute a quorum.

ARTICLE IX.—*Expulsion or Suspension of Members.*

Except for non-payment of dues no member of the Society shall be expelled or suspended save upon action by the Council with not more than three negative votes followed by a three-fourths ballot of the Fellows present and voting at a meeting of the Society.

ARTICLE X.—*Amendments.*

This constitution may be amended by an affirmative vote of two-thirds of the Fellows present at any meeting held at least one month after notice of such proposed amendment shall have been sent to each Fellow by the Secretary.

BY-LAWS

(AS AMENDED MAY 21, 1926)

ARTICLE I.—*Order of Business.*

At a meeting of the Society the following order of business shall be observed unless the Society votes otherwise for the time being:

1. Calling of the roll.
2. Address or remarks by the President.
3. Minutes of the last meeting.
4. Report by the Council on business transacted by it since the last meeting of the Society.
5. New membership.
6. Reports of officers and committees.
7. Election of officers and Council (at annual meetings only.)
8. Unfinished business.
9. New business.
10. Reading of papers.
11. Discussion of papers.

ARTICLE II.—*Council Meetings.*

Meetings of the Council shall be called whenever the President or three members of the Council so request, but not without sending notice to each member of the Council seven or more days before the time appointed. Such notice shall state the objects intended to be brought before the meeting, and should other matter be passed upon, any member of the Council shall have the right to re-open the question at the next meeting.

ARTICLE III.—*Duties of Officers.*

The President, or, in his absence, one of the Vice-Presidents, shall preside at meetings of the Society and of the Council. At the Society meetings the presiding officer shall vote only in case of a tie, but at the Council meetings he may vote in all cases.

The Secretary-Treasurer shall keep a full and accurate record of the proceedings at the meetings of the Society and of the Council, send out calls for the said meetings, and, with the approval of the President and Council, carry on the correspondence of the Society. Subject to the direction of the Council, he shall have immediate charge of the office and archives of the Society.

BY-LAWS

The Secretary-Treasurer shall also send out calls for annual dues and acknowledge receipt of same; pay all bills approved by the President for expenditures authorized by the Council of the Society; keep a detailed account of all receipts and expenditures, and present an abstract of the same at the annual meetings, after it has been audited by a committee of the Council.

The Editor shall, under the general supervision of the Council, have charge of all matters connected with editing and printing the Society's publications. The *Proceedings* shall contain only the proceedings of the meetings, original papers or reviews written by members, discussions on said papers and other matter expressly authorized by the Council.

The Librarian shall, under the general supervision of the Council, have charge of the books, pamphlets, manuscripts and other literary or scientific material collected by the Society.

ARTICLE IV.—*Dues.*

The dues shall be ten dollars for Fellows payable upon entrance and at each annual meeting thereafter, except in the case of Fellows not residing in the United States, Canada, or Mexico, who shall pay five dollars at the time stated. The dues shall be five dollars for Associates payable upon entrance and each annual meeting thereafter until five such payments in all shall have been made; beginning with the sixth annual meeting after the admission of an Associate as such the dues of any Associate heretofore or hereafter admitted shall be the same as those of a Fellow. The payment of dues will be waived in the case of Fellows or Associates who have attained the age of seventy years.

It shall be the duty of the Secretary-Treasurer to notify by mail any Fellow or Associate whose dues may be six months in arrears, and to accompany such notice by a copy of this article. If such Fellow or Associate shall fail to pay his dues within three months from the date of mailing such notice, his name shall be stricken from the rolls, and he shall thereupon cease to be a Fellow or Associate of the Society. He may, however, be reinstated by vote of the Council, and upon payment of arrears of dues.

ARTICLE V.—*Designation by Initials.*

Fellows of the Society are authorized to append to their names the initials F. C. A. S.; and Associates are authorized to append to their names the initials A. C. A. S.

ARTICLE VI.—*Amendments.*

These by-laws may be amended by an affirmative vote of two-thirds of the Fellows present at any meeting held at least one month after notice of the proposed amendment shall have been sent to each Fellow by the Secretary.

SYLLABUS OF EXAMINATIONS

SUBJECTS

ASSOCIATESHIP: (*Part I: Sections 1 to 4; Part II: Sections 5 to 8*)

Section 1. Advanced algebra

Section 2. Compound interest and annuities certain

Section 3. Descriptive and analytical statistics

Section 4. Elements of accounting, including double-entry bookkeeping

Section 5. Finite differences

Section 6. Differential and integral calculus

Section 7. Probabilities

Section 8. Elements of the theory of life contingencies; life annuities; life assurances

FELLOWSHIP: (*Part I: Sections 9 to 12; Part II: Sections 13 to 16*)

Section 9. Policy forms and underwriting practice in casualty insurance

Section 10. Investments of insurance companies

Section 11. Insurance law and legislation

Section 12. Economics of insurance

Section 13. Calculation of premiums and reserves for casualty (including social) insurance

Section 14. Advanced practical problems in casualty (including social) insurance statistics

Section 15. Advanced problems and practical methods of casualty insurance accounting

Section 16. Advanced problems in underwriting, administrative and service elements of casualty (including social) insurance

EXAMINATION REQUIREMENTS

RULES REGARDING EXAMINATIONS FOR
ADMISSION TO THE SOCIETY

(AS AMENDED NOVEMBER 17, 1925)

The Council adopted the following rules providing for the examination system of the Society:

1. Examinations will be held on the first Wednesday and Thursday during the month of May in each year in such cities as will be convenient for three or more candidates.

2. Application for admission to examination should be made on the Society's blank form, which may be obtained from the Secretary-Treasurer. No applications will be considered unless received before the first day of March preceding the dates of examination.

3. A fee of \$5.00 will be charged for admission to examination. This fee is the same whether the candidate sits for one or two parts and is payable for each year in which the candidate presents himself. Examination fees are payable to the Secretary-Treasurer and must be in his hands before the first day of March preceding the dates of examination.

4. The examination for Associateship consists of two parts. No candidate will be permitted to present himself for Part II unless he has previously passed in Part I or takes Parts I and II in the same year. If a candidate takes both parts in the same year and passes in one and fails in the other, he will be given credit for the part passed. Upon the candidate having passed both Parts I and II he will be enrolled as an Associate, provided he presents evidence of at least one year experience in actuarial, accounting or statistical work in casualty insurance offices or in the teaching of casualty insurance science at a recognized college or university, or other evidence of his knowledge of the actuarial, accounting and statistical work of casualty insurance offices as is satisfactory to the Council.

5. In the case of applicants in the following classes, the Council may, upon receipt of satisfactory evidence that applicants are within the terms of this rule, waive the passing of both Parts I and II of the Associateship Examination. Such applicants may become Associates upon passing Part I of the

EXAMINATION REQUIREMENTS

Fellowship Examination, and may be admitted as Fellows by examination, provided they subsequently pass Part II of the Fellowship Examination.

- (a) Casualty insurance men not less than thirty years of age who have been in the business a number of years and who have attained responsible actuarial, statistical, accounting or semi-executive positions.*
- (b) Fellows and Associates by examination of the Actuarial Society of America or of the American Institute of Actuaries.

6. The examination for Fellowship is divided into two parts. No candidate will be permitted to present himself for Part II unless he has previously passed in Part I or takes Parts I and II in the same year. If a candidate takes both parts in the same year and passes in one and fails in the other, he will be given credit for the part passed.

7. As an alternative to the passing of Part II of the Fellowship examination, a candidate may elect to present an original thesis on an approved subject relating to casualty or social insurance. Candidates electing this alternative should communicate with the Secretary-Treasurer as to the approval of the subject chosen. All theses must be in the hands of the Secretary-Treasurer before the first Thursday in May of the year in which they are to be considered. Where Part I of the Fellowship examination is not taken during the same year, no examination fee will be required in connection with the presentation of a thesis. All theses submitted are, if accepted, to be the property of the Society and may, with the approval of the Council, be printed in the *Proceedings*.

*In support of the candidate's claim that he is within the terms of this rule, he should attach to his application a letter from each of the nominators signing his application. These letters should state the facts of the candidate's experience which appear to entitle the candidate to the benefit of this rule.

1927 EXAMINATIONS OF THE SOCIETY

EXAMINATION COMMITTEE

SYDNEY D. PINNEY - - CHAIRMAN

IN CHARGE OF
ASSOCIATESHIP EXAMINATIONS
WILLIAM M. CORCORAN, CHAIRMAN
HAROLD J. GINSBURGH
CHARLES J. HAUGH

IN CHARGE OF
FELLOWSHIP EXAMINATIONS
WILLIAM F. ROEBER, CHAIRMAN
JOSEPH LINDER
HARMON T. BARBER

EXAMINATION FOR ADMISSION AS ASSOCIATE

PART I

1. (a) Expand $(8 - 9x^3 + 18x^4)^{4/3}$ as far as x^3 .
 (b) Define function, independent variable, dependent variable, and rational integral function.

2. (a) A man ascends the last half of a mountain at a rate $\frac{1}{2}$ mile an hour less than his rate during the first half, and reaches the top in $3 \frac{3}{5}$ hours. On the descent his rate is one mile an hour greater than during the first half of the ascent and he accomplishes it in $2 \frac{2}{7}$ hours. Find the distance to the top.
 (b) Solve:

$$\begin{aligned} 3x^2 + 165 &= 16xy \\ 7xy + 3y^2 &= 132 \end{aligned}$$

3. (a) Find an arithmetical progression whose first term is unity such that the second, tenth, and thirty-fourth terms form a geometric series.
 (b) Find whether the series

$$\frac{1^2}{2^2} + \frac{1^2 \cdot 3^2}{2^2 \cdot 4^2} x + \frac{1^2 \cdot 3^2 \cdot 5^2}{2^2 \cdot 4^2 \cdot 6^2} x^2 + \dots$$
 is convergent or divergent

1927 EXAMINATIONS OF THE SOCIETY

4. (a) An eight oared boat is to be manned by a crew chosen from 11 men, of whom 3 can steer but cannot row and the rest can row but cannot steer. In how many ways can the crew be arranged, if two of the men can row only on the bow side.

- (b) Show that:

$$\frac{\sqrt[4]{5} \cdot \sqrt[4]{2}}{\sqrt[3]{18} \sqrt{2}} = \frac{1}{4} \log 5 - \frac{2}{5} \log 2 - \frac{2}{3} \log 3.$$

5. (a) What is meant, in respect to a statistical series, by
 (1) Dispersion
 (2) Skewness
- (b) Define mean, median and mode and discuss the relationship between them in
 (1) An ideal frequency distribution.
 (2) A moderately asymmetrical frequency distribution.
 (3) A markedly asymmetrical frequency distribution.
6. Compute, for the following table, (method of assumed average)
- (a) the coefficient of dispersion based upon the Standard Deviation
- (b) the coefficient of skewness based upon the Standard Deviation

<u>Amounts</u>	<u>Frequencies</u>
\$5.00 to \$5.99.....	15
6.00 to 6.99.....	40
7.00 to 7.99.....	66
8.00 to 8.99.....	91
9.00 to 9.99.....	113
10.00 to 10.99.....	49
11.00 to 11.99.....	30
12.00 to 12.99.....	27
13.00 to 13.99.....	2
14.00 to 14.99.....	1

7. (a) What is a coefficient of correlation? Give the formula for the Pearsonian coefficient of correlation.
- (b) What is a line of regression?

1927 EXAMINATIONS OF THE SOCIETY

8. Assuming that both average weekly earnings and index numbers of employment were available for manufacturing industries for calendar years, explain the manner in which you would determine the trend in claim frequency rates in workmen's compensation insurance if earned payrolls and number of claims were given for manufacturing industries for policy years 1916 to 1924 inclusive.
9. (a) Find the present value of \$4,000 due after $3\frac{1}{2}$ years if money is earning interest at the rate of 7% compounded semi-annually.
 (b) Develop expressions for the value of $s_{\overline{n}|}^{(p)}$ and $a_{\overline{n}|}^{(p)}$.
10. A bond for \$10,000 bearing interest at 6% per annum payable half yearly and redeemable at par at the end of 40 years from date of issue, was issued at par 30 years ago. Its present market value is \$11,500. Find the rate of interest yielded to a purchaser buying now at the present market value: given $(1.02)^{-20} = .67297$ and $(1.0225)^{-20} = .64082$.
11. A loan of \$100,000 bearing interest at the rate of 5% per annum is to be repaid in 20 years in 40 equal payments including interest and principal. Given $(1.025)^{-20} = 0.6103$ find
 (a) Amount of each payment.
 (b) Amount of principal included in the 21st payment.
12. A \$1,000 bond bearing interest at the rate of $5\frac{1}{2}\%$, payable semiannually, and due January 1, 1937, is issued January 1, 1927, at a price to yield the purchaser 5%. Find the purchase price.
 Given $a_{\overline{20}|} = 15.5892$ when $i = .025$.
13. A city issues bonds in the amount of \$250,000 bearing interest at the rate of 5%, payable annually, and falling due 20 years from the date of issue. Provision is made for redemption of the bonds when due by creating a sinking fund into which equal annual payments are to be made. Assuming that the sinking fund earns interest at the rate of 4% find the total annual cost incurred through the bond issue. Given $(1.04)^{20} = 2.1911$.

1927 EXAMINATIONS OF THE SOCIETY

14. From the following trial balance, prepare Profit and Loss Account and Balance Sheet.

G. L. Pennock
Trial Balance—December 31, 1926

Cash.....	\$4,900	
Accounts Receivable.....	4,350	
Bills Receivable.....	1,000	
Furniture and Fixtures.....	1,100	
Delivery Equipment.....	2,500	
Merchandise on Hand June 30, 1926.....	6,500	
Accounts Payable.....		\$4,050
G. L. Pennock, Capital.....		14,650
Purchases.....	43,750	
Sales.....		50,700
General Administration Expense	4,600	
Delivery Expense.....	1,000	
Loss on Bad Accounts.....	100	
Discounts on Purchases.....		400
	<u>\$69,800</u>	<u>\$69,800</u>

Merchandise on Hand December 31, 1926—\$7,100.

15. (a) How do accounts kept on an "incurred" basis differ from those kept on a "cash" basis?
 (b) Define (1) closing entry, (2) balance sheet, (3) suspense account, (4) sinking fund, (5) reserve.
16. An insurance company on a certain day issued new policies bearing premiums of \$20,000. It cancelled policies bearing premiums to the amount of \$1,000 and charged up earned premiums thereon of \$250. Its total premium collections for the day were \$10,000 on which it paid \$3,000 commissions. It paid a loss of \$3,000, and received credit at the bank for \$2,500 interest coupons. Make journal entries covering all the above transactions.

PART II

1. Sum, by the method of Finite Differences, the first ten terms of the series whose general term is $n^3 + 2n^2 + 3n$

1927 EXAMINATIONS OF THE SOCIETY

2. By the method of separation of symbols, derive an expression of u_n as a series consisting of u_0 and its successive differences.
3. Find the probability that a person aged 53 will live one year.
Given

$$p_{60} = .98428$$

$$p_{61} = .98335$$

$$p_{64} = .98008$$

$$p_{65} = .97877$$

4. (a) A bag contains six black balls and one red. A person is to draw them out in succession and is to receive one dollar for every ball he draws until he draws the red one. What is his expectation?
(b) In a certain game A's skill is to B's as 3 to 2. Find the chance of A winning 3 games at least out of 5.
5. (a) A man writes 3 letters and directs 3 envelopes into which he puts them at random. Find the chance that all the letters will go wrong.
(b) The sum of 2 positive integers is 80. Find the chance that their product is greater than 600.
6. A bag contains 6 fifty-cent pieces and 4 coins each of which has the same value. If a person's expectation on drawing three coins is 120 cents, find the value of the unknown coins.
7. A makes a bet with B of \$5 to \$2 that in a single throw with two dice he will throw seven before B throws four. Each has a pair of dice and they throw simultaneously until one of them wins: find B's expectation.
8. In two throws with a pair of dice what are the probabilities of the following events:
 - (a) 8 the first throw followed by 9 the second
 - (b) 9 the first throw, or if not, 8 the second

1927 EXAMINATIONS OF THE SOCIETY

9. (a) Find $\int \frac{x^2 dx}{(a^2 + x^3)^{\frac{1}{2}}}$
- (b) Evaluate $\int \frac{x dx}{\sqrt{x} + 1}$
10. (a) Expand e^{-kx} into a power series by MacLaurin's Theorem, and state the values of x for which the series is convergent or divergent.
- (b) Sketch roughly and name the following curves:
 $y = \log x$
 $y = e^x$
 $y = e^{-x^2}$
11. (a) Find $\frac{dy}{dx}$ when $y = \sqrt{\frac{1-x}{1+x}}$.
- (b) Differentiate: $y = \left(\frac{1}{x}\right)^x$.
12. Given
- $$\begin{aligned} {}_{20}p_{40} &= .6 \\ {}_{10}p_{30} &= .8 \\ {}_9p_{30} &= .81 \end{aligned}$$
- (a) Obtain a value for ${}_{30}q_{30}$
- (b) Obtain a value for ${}_9q_{30}$
13. If ${}_np_x$ (or ${}_np_y$) is the probability that an individual aged x (or y) will live n years, find the probability that:
- At least one of x and y will survive n years.
 - x will survive n years and y will die within n years.
 - At least one of the lives will fail within n years.
 - Both lives will fail in the n th year.
14. Give formulæ relating the following quantities to each other, using an interest factor when necessary:
- A_x, a_x, a_x
 - A_x, a_x
 - P_x, a_x
 - A_x, P_x, a_x

1927 EXAMINATIONS OF THE SOCIETY

15. Given $v^{10} = 0.7441$, ${}_{10}p_{25} = .91955$, $a_{35} = 18.52050$
- Find the present value of an annuity of \$1,000 per annum, deferred 10 years, on a life aged 25.
 - Find the present value of \$5,000 to be paid at the end of 10 years to an individual whose present age is 25, payment being contingent upon his being alive at that time.
16. (a) Explain the construction and use of commutation columns.
- (b) Prove that D_x is always greater than M_x .

EXAMINATION FOR ADMISSION AS FELLOW

PART I

- Discuss briefly the principal features to be investigated in the inspection of a fleet risk for complete coverage under Automobile insurance.
 - Explain each of the following coverages under Boiler insurance:
 - Cracking and fracturing
 - Main steam pipe
 - Pressure pipe
- State briefly the coverage afforded in each of the following bonds:

Fidelity	Franchise	Appeal
Fiduciary	Immigrant	Internal Revenue
 - What factors enter into the underwriting of (1) a Contract Bond and (2) a Fidelity Bond covering the employee of an industrial concern?
- What is the difference between deductible average and coinsurance?
 - Name a line of casualty insurance to which each is applicable.

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4. Indicate which of the following classes of investments are open to casualty companies under the laws of most states and which are not. Mention any special limitations on any of these classes of investments.
 - (1) Bonds of the Dominion of Canada
 - (2) Second mortgages on urban real estate
 - (3) Public Utilities—common stock
 - (4) Real estate—title secured through foreclosure of mortgage loans
 - (5) Bonds of street railway companies
 - (6) Bonds of United Kingdom of Great Britain
 - (7) Stock of other insurance companies engaged in same lines
 - (8) Bonds of the City of New York
 - (9) Buildings used for branch office purposes
 - (10) Collateral loans on approved securities
5. (a) How does the statutory coverage prescribed by the Massachusetts compulsory automobile law differ from the liability coverage written in other states?
(b) Discuss compulsory automobile insurance, with special reference to (1) effect on loss cost, (2) underwriting problems and (3) social aspects.
6. (a) Discuss the development of the compensation principle in regard to its legislative and judicial aspects.
(b) Trace the transition from anti-discrimination laws to rating laws.
7. (a) The laws of a particular state with reference to unlicensed foreign insurance corporations merely prohibit the making of the insurance contract without compliance with the terms of the statutes. Discuss the position of both the insured and the insurer in attempting to later enforce a contract made without such compliance.
(b) Assuming that the statutes not only prohibit such a contract but in addition impose a penalty on a carrier operating in violation of such statutes, is the position of the carrier altered to any extent? Discuss.

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8. Discuss the conditions which are necessary in order that an insurance contract may operate equitably, produce the desired benefits and be practicable from a business point of view.
9. (a) How is the minimum premium for Manufacturers and Contractors Public Liability insurance computed when limits other than 5/10 are written? How is the term "insured premises" defined in the policy? What constitutes estimated wages?
(b) Name three standard restrictions in the Elevator Public Liability policy. When may an Elevator policy be issued at 50% of the rates as given in the manual?
10. (a) What dimensions of the building (inside or outside) are used in computing the area for Owners, Landlords and Tenants Public Liability insurance? Are the courts included or excluded?
(b) Into what general classes are theatres divided for rating purposes under Public Liability insurance? What is the premium basis?
(c) What factors would you take into consideration in underwriting the Plate Glass insurance on a chain store risk?
11. What, in your opinion, should be the scope of a law regulating the investments of insurance carriers? Give reasons.
12. (a) How do the legal restrictions on investments of casualty insurance companies compare in general with those for savings banks?
(b) Discuss the attractiveness of the following classes of investments from the viewpoint of an insurance company principally engaged in (a) fidelity and surety and (b) in compensation insurance:
 - (1) U. S. Government Bonds
 - (2) First mortgages on farm lands
 - (3) Approved corporate stocks

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13. (a) How does New York State regulate the value which an insurance company may place on the capital stock of a subsidiary? What is the reason for this regulation?
(b) Discuss the effect of the U. S. Supreme Court decision in the case of International Stevedoring Co. vs. Haverty, in general, and in connection with the following example:—Claimant was stevedore working in hold of vessel. Co-worker gave wrong signal to hoist man. Loaded sling was lowered, crushing injured's back.
14. (a) What constitutes an insurable interest in property?
(b) Can a general creditor insure the property of his debtor as a possible means of receiving payment of his claim?
15. (a) Discuss the influence of labor saving devices on compensation cost.
(b) Is a uniform national compensation law providing benefits varying according to industry desirable? Discuss.
16. Enumerate five major obstacles to the independence and progress of an individual. Point out the opportunities for insurance to aid in a program of social reform suitable for the United States to follow.

PART II

1. What are the relative advantages and disadvantages of using the experience of (1) the latest available policy year, (2) the latest three available policy years and (3) the latest five available policy years in determining the rate level for Compensation Insurance? Which of the three methods do you consider the best? Give reasons.
2. (a) Distinguish clearly between burglary, theft, larceny and robbery.
(b) What do you consider the proper basis for the establishment of the unearned premium reserve in non-cancellable Accident and Health Insurance? Give reasons.

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3. Design a punch card to be used in reporting Massachusetts compulsory automobile public liability exposure, which could be used for preparing classification experience at any time during the policy period covering the earned portion of the exposure on all policies issued prior to the experience date. Explain the purpose of each "field."
(Note—Examination monitor will supply blank punch card).
4. (a) What is the aim and immediate program of the stable money movement? How would the success of the movement affect insurance?
(b) Name ten items which may each be used as the basis of a monthly index of business conditions. Discuss.
5. (a) Explain the nature and effect of the provision made in the convention form of annual statement for a reserve for unpaid compensation loss adjustment expense.
(b) What suggestions do you offer for an improvement in the annual statement provision for this item?
(c) What items of information can be obtained from the annual statement with reference to the Automobile Liability business only of a company?
6. Of what does the New York Casualty Experience Exhibit consist and what is its purpose? In what way does Part I of this exhibit supplement another exhibit which has been a part of the convention blank for some years?
7. Discuss fully the monopolistic state fund theory, with particular reference to Ohio, from the standpoint of (1) society (2) the employer and (3) the employee.
8. A large casualty company operating in all sections of the country, passes upon all applications and approves the payment of all claims through the Home Office. Outline a plan for accomplishing the decentralization of the organization with the delegation of a minimum of authority.
9. (a) How would you determine the pure premium for the double indemnity benefit in Accident Insurance?
(b) Discuss Schedule Rating in Compensation Insurance with particular reference to its application in Coal Mines.

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10. Contrast the New York and Pennsylvania procedure in connection with the following compensation matters pointing out the advantages and disadvantages of each:
- Rate manual and development of manual rates
 - Experience rating
 - Schedule "Z"
11. The following is a facsimile of a punch card used in tabulating Compensation experience rating data:

NAME OF RISK														
STATE	12 DATE OF ISSUE	MODIFIED NORMAL LOSS	MODIFIED EXCESS LOSS	EXPECTED EXCESS LOSS	CH ADJUSTED CR NORMAL LOSS	CH ADJUSTED CR EXCESS LOSS	CH % CR MOD.	EXP PER YRS	GOVERNING CLASS X	MANUAL PREMIUM	Y-SCH. AND EXP. SUBJECT X-EXP. ONLY PREMIUM			
00	10	00	00	00	00	00	00	00	00	00	00			
00	30	00	00	00	00	00	00	00	00	00	00			

- What is the purpose of each of the following "fields"?
 - Month of Issue
 - Experience Period in Years
 - Code of Governing Classification
 - How would you obtain the following information from a tabulation of the data shown on this card?
 - Effect of experience rating on business subject to experience rating.
 - Combined effect of experience and schedule rating on business subject to experience rating.
 - Effect of schedule rating on business subject to both experience and schedule rating.
 - Ratio of "Normal Modified Loss" to "Normal Expected Loss."
12. Given a distribution of temporary compensation claims by duration of disability, describe in detail how you would obtain an estimate of the increase in compensation cost caused by the January 1, 1925 amendment to the New York compensation law which changed the waiting period from two weeks retroactive at seven weeks to one week retroactive at seven weeks.
13. (a) What is the purpose of a deposit premium? What factors should be taken into consideration in computing it?

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- (b) What is the purpose of a second reporting of Schedule "Z"? Discuss from the standpoint of both premium and losses.
- 14. (a) Describe the procedure to be followed in computing an unearned premium reserve on the semi-monthly pro-rata basis, naming the records from which the data are drawn.
- (b) The high rates of resignation and dismissal make the development of an aggregate pension fund service table impracticable for a certain branch of municipal service. What method do you suggest for overcoming this difficulty?
- 15. The Missouri compensation act became effective January 9, 1927. Prepare a set of Rules of Procedure to provide continuous coverage to risks previously covered by employers' liability policies including policies with the following expiration dates (bearing in mind that these policies are typical of large numbers of other policies which require uniform treatment):
 - (1) December 15, 1926
 - (2) January 15, 1927
 - (3) July 15, 1927
- 16. (a) What is the difference between the "stop loss" and "excess" forms of coverage as applied to Compensation Insurance?
- (b) What are the advantages and disadvantages of each? Discuss fully.

